MONTHLY WEATHER REVIEW.

Editor: Prof. CLEVELAND ABBE.

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INTRODUCTION.

The REVIEW for April, 1895, is based on reports from 3,254 stations occupied by regular and voluntary observers. These reports are classified as follows: 148 reports from Weather Bureau stations; 35 reports from U. S. Army post surgeons; 2,390 monthly reports from State Weather Service and voluntary observers; 30 reports from Canadian stations; 96 reports through the Southern Pacific Railway Company; 624 marine reports through the cooperation of the Hydrographic Office, Navy Department, and New York Herald Weather Service; monthly reports from 30 U. S. Life-Saving stations; monthly reports from local services established in all States and Territories; and international simultaneous observations. Trustworthy newspaper extracts and special reports have also been used.

The WEATHER REVIEW is prepared under the general editorial supervision of Prof. Cleveland Abbe. Unless otherwise specifically noted, the text is written by the Editor, but the statistical tables are furnished by the Division of Records and Meteorological Data, in charge of Mr. A. J. Henry, chief of that division.

CHARACTERISTICS OF THE WEATHER FOR APRIL, 1895.

The month was characterized by the infrequency and slow movement of storm areas. The temperature was generally in excess over the interior of the country and the pressure was slightly deficient. Dry winds and duststorms prevailed frequently from Texas to Manitoba. The rainfall was in excess throughout the Atlantic States, but generally deficient in the interior. Remarkable river floods occurred on the 9th and 10th in the middle and south Atlantic States, and on the 15th and 16th throughout New England.

ATMOSPHERIC PRESSURE (*in inches and hundredths*).

By Prof. FRANK H. BIGELOW.

The distribution of mean atmospheric pressure reduced to sea level, as shown by mercurial barometers not reduced to standard gravity and as determined from observations taken daily at 8 a. m. and 8 p. m. (seventy-fifth meridian time), is shown by isobars on Chart II. That portion of the reduction to standard gravity that depends on latitude is shown by the numbers printed on the right-hand border.

During the current month the highest mean pressures were on the coasts of Massachusetts, Rhode Island, and Connecticut, the southern coast of Florida, the upper Lake region, and the coasts of southern Washington, Oregon, and California. The extreme highest were: Eureka, 30.12; San Francisco, 30.11; White River, 30.10; Sault Ste. Marie, 30.07. The lowest mean pressure was in Assinniboia, 29.89 at Battleford; at Yuma the mean was 29.90.

As compared with the normal for April the mean pressure for the current month was slightly deficient in the interior. The maximum deficit was 0.10 at Concordia. Pressure was in excess on the Pacific coast, plateau region, and especially the east Atlantic coast. The maximum excess was 0.16 at Sydney.

As compared with the preceding month of March, the pressures reduced to sea level show a rise on the Atlantic and Pacific coasts; the maximum rise was 0.30 at St. Johns, N. F., and the maximum fall 0.14 at Sioux City, North Platte, and Wichita.

The systematic periodic diurnal variations of pressure are shown by the hourly means given in Table V.

HIGH AND LOW AREAS.

Instead of describing all the high areas in succession by themselves, and then all the low areas by themselves, it seems more natural to consider the interactions between the highs and the lows, in their eastward drift, as counterparts of a system of surface circulation, and to discuss them simultaneously. Accordingly a section will be devoted to the tracks of the high areas, another will be given to the low areas, and a third will contain such descriptive matter as appears to be properly suggested by the special features characteristic of the April weather conditions.

HIGH AREAS.

An inspection of the tracks of the centers of the high areas for April exhibits, in many respects, a very instructive view of the tendency to move in certain well-defined paths, that is really characteristic of all anticyclonic circulation in the United States at all seasons of the year. Originating on the middle Pacific coast, or in the extreme northwestern territory, the highs may reach the Atlantic Ocean by two distinct circuits, (1) over the Lake region and the St. Lawrence Valley, and (2) over the Rocky Mountain slope, the Gulf States, and the Atlantic coast. The former may be called the "northern" circuit and the latter the "southern" circuit.

These paths are no doubt determined chiefly by two principal agencies, (1) the general circulation of the atmosphere, by which a high pressure belt tends to be formed along the parallels 30° to 35° and a low pressure belt along the parallels near 55°, and (2) by the relations of the continental configurations, including mountain ranges and coast lines, to the masses of water, lakes and oceans. In each case the distribution goes back to the distributions of temperature generated (1) by the solar radiation upon the tropics, and (2) by the conservation or differential radiation of the land and water masses. It will also be seen by comparison of the temperatures and pressures with the variations of the polar magnetic radiation from the sun that for the belts above mentioned the tendency is to break up into isolated masses, or highs and lows, in response to this variable radiation, which is superposed upon the resultant effect of the equatorial radiation combined with the forces depending upon the gravitation and rotation of the earth. The very many forms of storm development may easily be traced back to these primary forces; the uncertainty whether an individual storm may pursue the northern or the southern circuit is the chief source of doubt in weather forecasting.

In April the location of the high area tracks is as follows:

I.—On the morning of April 1 this was central in southern Wyoming, moving thence southeastward it passed over the Gulf States on the 3d and 4th, and during the 5th, 6th, 7th, and 8th it passed northward, skirting the Atlantic seaboard to Newfoundland, where it disappeared on the morning of the 9th from the territory of observation.

II.—This high began to develop on the California coast during the 2d, settled somewhat to the southward during the 3d, turned back northward on the 4th and 5th, crossed the Columbia River Valley in the Rocky Mountains on the 6th, passed southward to Colorado, with a very strong tendency to follow the summit of the highest elevations in the range, 5,000 feet altitude, and dissipated after some uncertain movements during the 8th. This area entered the southern circuit, but failed to sustain itself during the eastern portion of its path.

III.—This high originated between the one hundred and fifth and one hundred and tenth meridians north of Montana on the 8th, moved directly eastward over the Lake region during the 9–10th, reached the Atlantic coast near Massachusetts on the afternoon of the 11th; thence it turned abruptly northeastward, followed the coast line to Newfoundland, and then instead of disappearing to the eastward it moved westward up the St. Lawrence Valley and united with IV *b* on the morning of the 16th in the neighborhood of Father Point, Que. The new configuration, III and IV*b*, continued to the west as far as Lake Huron on the 18th, whence it moved southward over Lower Michigan, Indiana, eastern Kentucky to Georgia, where the combined high dissipated on the morning of the 20th. This is evidently a remarkable example of a sluggish or suspended general eastward drift, in consequence of which two highs, III and IV *b*, at one time far apart, united together and moved wholly away from the mean tracks, namely, from the northern to the southern circuit across the central valleys.

IV.—This high also had a remarkable track. It developed on the middle Pacific coast on the afternoon of the 9th, pursued the same course from the west coast to the eastern side of the mountains, that is, it moved northward on the 10th, crossed the Columbia Valley on the 11th, skirted the high elevations southeastward on the 12th, and entered the Gulf States on the 13th. In Oklahoma, on the morning of the 13th, the high began to divide into two centers, Nos. IV*a* and IV *b*. The former, No. IV*a*, moved eastward over the Gulf States during the 14th and settled upon southern Florida, where it broke up on the 15th of the month. The latter, No. IV *b*, moved rapidly northward from Oklahoma to Lake Superior, lingered over the Lakes during the 14–15th, united with No. III in lower Canada on the 16th, redoubled on itself, and finally dissipated in Georgia, as already described in connection with No. III.

V.—This high was generated on the southern Pacific coast on the evening of the 12th, moved to northern California by the 14th, crossed the mountains south of the Columbia Valley and the elevated land of northern Nevada, 5,000 to 6,000 feet, during the 15th, and died out in Colorado on the 16th of the month.

VI.—This high also had a short track, beginning on the middle Pacific coast on the 16th, passed the Columbia Valley on the 17th, and faded away in Montana during the 18th.

VII.—This high developed on the Pacific coast of Washington on the afternoon of the 18th, crossed the Rocky Mountains well to the northward on the 20th, moved southward along the elevated lands during the 21st and 22d, and on the 23d was in southern Texas, whence it passed along the Gulf coast, and on the 23d, p. m., united with high area No. VIII, and then continued its course along the Gulf and Carolina coasts, where the entire high area disappeared on the 25th near Hatteras.

VIII.—This high formed in northern Florida on the morning of the 21st, settled to the south of Florida during the 22d, and on the 23d was drawn into the high area, No. VII, then approaching from the west, in union with which it passed to the Carolina coast and was dissipated. Nos. VII and VIII are clearly instances of action in the southern circuit.

IX.—This high was formed near the one hundred and fifteenth meridian, north of Montana, on the 24th, and moved directly eastward over the Lakes and the St. Lawrence Valley to the Gulf of Newfoundland, where it died out on the morning of the 28th. No. IX is a simple case of movement in the northern circuit. On the 30th a high was forming over the upper St. Lawrence Valley, but it had no motion to be recorded in April.

The marked feature of the movement of the high areas in April is the fact that none of them passed from the land to the ocean areas lying east of the Gulf of St. Lawrence, but that they all followed the main paths of normal movement, with slight disturbance.

LOW AREAS.

On comparing the tracks of the high and low areas as given on Charts I and IV, it is seen that in the northern circuit across the Lakes they both lie on the same ground, as if they followed each other in the eastward movement. In the case of the Rocky Mountain and southern circuit, it is easily perceived that the tracks of the lows lie to the eastward of the highs in the Rocky Mountain districts, and to the northward of the same in the Gulf States, both together hugging the coast line in the Atlantic States. The tracks of the highs in the Rocky Mountains lie over the elevations of 5,000 to 6,000 feet, while the lows are over the elevations of 1,000 to 2,000 feet, in general a difference of 4,000 feet. This fact is clearly of importance in the study of storm generation, and points to some basis, probably the effect of the temperature of these respective elevations upon the density of the air. In the same way the relatively small difference of temperature in April between the water areas and the contiguous land areas causes the tracks of highs and lows to agree more closely with each other in location.

I.—This low on the morning of April 1 was found central in Ohio; it moved to the Virginia coast, and during the 2d showed some uncertainty in its direction, but during the 3d and 4th it moved along the coast line to Newfoundland and disappeared from the map on the morning of the 5th.

II.—This low originated near the one hundred and twenty-

fifth meridian west of the State of Washington, on the morning of the 1st. Its course during the 2d and 3d was erratic to the north of Montana, and on the 4th and 5th was southeast over the lower Rocky Mountain slope to eastern Kansas, where it halted on the 6th, and then on the 7th and 8th it moved rapidly eastward up the Ohio Valley to western Pennsylvania, and thence on the 9th and 10th to Newfoundland, where it disappeared on the morning of the 11th.

III.—This low began on the 7th, p. m., north of Montana; moved southwestward into Washington on the 8th; on the 9th, a. m., showed two centers—III*a*, in eastern Washington, and III*b*, in southeastern Montana; thence the center of low pressure was transferred rapidly to the south, and by the evening of the 9th was in northwestern Texas; after moving slowly to the east, it disappeared in northern Texas on the 10th.

IV.—This low was first observed near the one hundred and twentieth meridian in British Columbia on the evening of the 9th; it crossed the mountains on the 10th on the parallel 56°, and when north of Montana, during the night of the 10th, divided into two branches—IV*a*, moving to the east, and IV*b*, toward the south and east to Kansas, where the short branch terminated on the evening of the 11th. IV*a* had, on the other hand, a long track, passing over the Lakes, on the evening of the 12th, with two centers, which reunited on the morning of the 13th in the Upper St. Lawrence Valley, and thence passed to the southeast New England coast, where it lay with no certain movement during the 14th and 15th, when it finally disappeared.

V.—This storm began near the one hundred and fifteenth meridian northwest of Montana and pursued the southern circuit to the south Atlantic coast, without regaining the original high northern latitude again. It appeared on the evening of the 12th; moved southwestward to the middle Columbia Valley on the morning of the 13th; recrossed the mountains during the 13th, in the evening being again north of Montana; thence moved rapidly southeastward during the 14th and 15th and was in Arkansas by the morning of the 16th, whence it moved eastward over northern Mississippi, Alabama, and Georgia. On the morning of the 17th, in Georgia, the storm divided, the center, V*a*, passing to the Carolina coast and expiring early on the 18th; the second center, V*b*, passed directly southward over the Florida Peninsula and disappeared on the morning of the 19th near the Island of Nassau.

VI.—This low had a short existence in the extreme northwest, beginning on the evening of the 15th near the one hundred and twentieth meridian, north of Washington, crossing the mountain range on the 16th, and disappearing during the 17th to the northward of North Dakota.

VII.—This low, like so many others in this month, first appeared in the extreme northwest, near the one hundred and fifteenth meridian north of the western portion of Montana, on the morning of the 18th. It moved southeastward, with some vacillation of direction in Montana, during the 19th, passed thence along the mountain slope to Nebraska on the 20th, turned northeastward into the northern circuit, crossed the Lake region on the 21st, and thence down the St. Lawrence Valley, where it disappeared at the mouth of this river on the 22d.

VIII.—This low developed a simple track of the normal northern type. It formed north of North Dakota near the one hundred and third meridian on the evening of the 21st, moved rapidly to the east, crossed the Lakes on the 22d, passed down the St. Lawrence Valley to the Gulf by the evening of the 23d, where it passed away from observation.

IX.—This low also developed a normal track in the northern circuit. It formed on the evening of the 22d in Alberta, moved rapidly to the east, passed over the Lakes or to the northward of them by the morning of the 24th, down the St. Lawrence Valley during the 24th, and to the Gulf where it disappeared by the night of the 25th.

X.—This storm, like nearly all in the month of April, originated near the divide of the Columbia River Valley in the northwest on the evening of the 23d, moved into South Dakota by the 23d, recrossed the mountains to the west along the forty-second parallel into northern Nevada by the afternoon of the 26th, turned thence to the north into eastern Oregon by the morning of the 27th, where it subdivided and prepared to move again to the eastward. No. X*a* passed to central Montana and No. X*b* to southwestern Idaho on the evening of the 27th, the two centers uniting again in South Dakota on the morning of the 28th; thence the storm worked itself to Kansas by the 29th, and after oscillating in an uncertain way during the 29th and 30th, faded away by the night of the 30th in western Nebraska.

XI.—This low was formed in the southern circuit in northern Louisiana on the afternoon of the 26th, passed over the southern portion of Mississippi during the 27th, into northern Florida the 28th, where it dissipated on the morning of the 29th.

XII.—This storm first appeared on the morning map of the 30th in British Columbia. It passed directly eastward to the one hundred and tenth meridian by the night of the 30th, and its future track remains to be described in the May REVIEW.

MOVEMENT OF CENTERS.

The following table shows the date and location of the center at the first and last appearance of each area of high or low pressure on the U. S. Weather Maps during the month, together with the average daily and hourly velocities. The monthly averages will differ according as we consider each path as a distinct unit, or give equal weight to each day of observation; in the first case the monthly average is taken by paths, in the latter case by days.

Movement of centers of areas of high and low pressure.

Number.	First observed.			Last observed.			Path.		Average velocities.	
	Date.	Lat. N.	Long. W.	Date.	Lat. N.	Long W.	Length.	Duration.	Daily.	Hourly.
High areas.		°	°		°	°	*Miles.*	*Days.*	*Miles.*	*Miles.*
I	1, a. m.	42	109	9, a. m.	47	55	3,810	8.0	476	20
II	2, a. m.	41	124	8, p. m.	40	103	2,530	6.5	389	16
III	8, a. m.	53	106	20, a. m.	33	82	5,320	12.0	443	18
IV*a*	9, p. m.	37	123	15, p. m.	26	80	3,830	6.0	638	27
IV*b*	9, p. m.	37	123	20, a. m.	33	82	6,720	10.5	640	27
V	12, p. m.	35	121	16, p. m.	41	105	1,910	4.0	478	20
VI	16, p. m.	42	125	18, a. m.	50	106	1,110	1.5	740	31
VII	18, p. m.	46	125	26, a. m.	35	76	3,720	7.5	496	21
VIII	21, a. m.	31	82	26, a. m.	35	76	1,920	5.0	384	16
IX	24, a. m.	52	114	28, a. m.	47	65	2,520	4.0	630	26
Sums							33,390	65.0	5,314	
Mean of 10 paths									531	22.1
Mean of 65.0 days									514	21.4
Low areas.										
I	1, a. m.	41	83	5, a. m.	50	57	2,410	4.0	602	25
II	1, a. m.	47	125	11, a. m.	47	54	5,760	10.0	576	24
III	7, p. m.	51	115	10, p. m.	34	98	2,120	3.0	707	29
IV*a*	9, p. m.	50	120	16, a. m.	43	68	3,020	7.0	431	18
IV*b*	9, p. m.	50	120	11, p. m.	38	98	1,630	2.0	815	34
V*a*	12, p. m.	54	114	18, a. m.	35	75	3,560	5.5	647	27
V*b*	12, p. m.	54	114	19, a. m.	36	78	3,760	6.5	578	24
VI	15, p. m.	52	121	17, p. m.	54	104	1,150	2.0	575	24
VII	18, a. m.	54	115	22, p. m.	49	65	3,540	4.5	787	33
VIII	21, p. m.	53	108	23, p. m.	49	62	1,980	2.0	990	41
IX	22, p. m.	54	112	25, p. m.	55	60	2,380	3.0	793	33
X*a*	23, p. m.	51	116	30, p. m.	41	102	4,030	7.0	576	24
X*b*	23, p. m.	51	116	30, p. m.	41	102	3,980	7.0	569	24
XI	26, p. m.	33	94	29, a. m.	31	81	810	2.5	324	14
XII	30, a. m.	50	123	30, p. m.	52	115	370	0.5	.....	.....
Sums							40,500	66.5	8,971	
Mean of 14 paths									641	26.7
Mean of 66.5 days									609	25.4

It is thus brought to evidence that all the lows of April, except two, Nos. I and XI, originated in a very narrow territory in the extreme northwest, viz, the Rocky Mountain district just north of the Columbia River. From this and many other studies into the origin of the storms it is seen that this is the especial theater of storm development, and it may naturally be inferred that meteorological observations of every description ought to be prosecuted in this district with especial vigor.

DAILY SYNOPSIS OF STORMS AND WEATHER CONDITIONS.

1. The month of April opened with an area of high pressure, 30.20, covering the Rocky Mountain districts, and a general storm that filled the central valleys and Eastern States; the isobars were elongated from northeast to southwest; rain fell in the Mississippi Valley, the Lake region, the middle, south Atlantic, and Gulf States, and rain, turning into snow, in the Missouri Valley. The temperature was rising generally east of the Mississippi and falling to the west of it.

2. The storm central over the Ohio Valley on the morning of the 1st passed off the middle Atlantic coast attended by rain in the New England and the middle Atlantic States, and over the Ohio and Upper Mississippi valleys, with occasional rains on the middle Gulf coast. The temperature fell in the Ohio Valley, and thence over the middle Mississippi, the Western and Southwestern States, and rose in the south Atlantic States and the extreme northwest. Pressure was high from Lake Superior and Minnesota over the middle and southern Rocky Mountain regions, and also on the middle Pacific coast. Light frosts were reported in southwestern Kansas. A storm was advancing from the north Pacific coast to the region north of Montana, attended by rain in the north Pacific coast States.

3. The storm moved from the Virginia coast and was central off the Massachusetts coast, increased in energy, and was attended by brisk northwest winds, with snow, on the New England coast, and showers in the Atlantic coast States. The temperature fell in the Southern States and the extreme northwest, and rose in the Missouri Valley and the middle Rocky Mountain districts. Light frosts were reported in the middle Mississippi Valley, Arkansas, and the extreme northeastern portions of Texas. Heavy precipitation was reported during the 2d or 3d at Norfolk, 1.06; Titusville, 1.22; Jupiter, 1.12; Key West, 1.10; Tampa, 2.70.

4. The storm moved from Nantucket to the northeastward of Newfoundland. The storm in the extreme northwest increased in strength and was central north of Montana. An area of high pressure moved eastward over the Southern States, attended by light frosts in the northern portion of the east Gulf and south Atlantic States. Generally fair weather prevailed, except in the north Pacific coast districts, where it was cloudy or rainy. The temperature rose generally, except over the south Atlantic States and the extreme northwest, where it fell about 10°.

5. A storm of marked intensity moved southeastward over the Rocky Mountain slope and occupied the Missouri Valley, isobars elongated north and south; lowest reading of barometer was 29.29 at Huron, with high northwest winds. An area of high barometer occupied the Pacific coast and the western plateau region; the pressure in the east was high over the middle and south Atlantic. This arrangement of highs and the central low may be selected as an especially fine example of normal storm formation in the United States, agreeing almost perfectly with the mean of 10 storms of this type, prepared for special studies. The temperature rose generally east of the Rocky Mountains and fell decidedly over the plateau regions. The weather was generally fair throughout this entire storm region, but showers occurred on the Pacific coast in the middle of the high barometer. This is also an important example of a fully developed cyclonic circulation without precipitation, all that actually occurred being located in the midst of the descending air of the Pacific anticyclone. It is also a typical example of eastward movement in the southern circuit, the axis of development extending from the northern Rocky Mountain districts to the south Atlantic coast. Rain was, however, beginning in the Upper Mississippi Valley as a consequence, not a cause, of the cyclonic action of the air.

6. The storm passed from the Missouri Valley southward over eastern Kansas, attended by showers in the central valleys and the Lake region. The lowest barometer was 29.24, at Wichita, and the winds around the center were high, though not dangerous. An area of high pressure covered the Rocky Mountain districts and the barometer was also high over New England. The temperature rose generally east of the Mississippi and fell decidedly in the Western and Southwestern States, viz, 20° to 30° in twenty-four hours.

7. The storm in Kansas remained nearly stationary, though it moved slightly eastward, diminishing in energy. The high pressure overspread the Rocky Mountain region, and the barometer continued high over New England. The temperature fell in the Mississippi Valley and the southwest, and rose in the Rocky Mountain regions and the northwest. Showers occurred throughout the central valleys and Lake region, also in New York and Pennsylvania. Heavy precipitation was reported from 10 stations in the middle Gulf States.

8. The storm moved northeastward, and on the morning of the 8th was central over Lower Michigan; the high in the west extended to Texas, and the high over New England moved slowly eastward. The temperature rose in the middle Atlantic and southern New England States, and remained nearly stationary in the other districts. The rain area stretched over the region from the central valleys to the Atlantic coast; heavy rain fell in the Atlantic coast States south of Pennsylvania and in portions of the Ohio Valley. Fair weather prevailed in the Southwestern States and Rocky Mountain districts and thence to the Pacific coast. In the case of this storm the high winds threatened on the 6th seem to have been dissipated in the production of precipitation, the isobars in the meanwhile flattening themselves into the loose form characterizing rain areas. The persistent action of the New England high, after its transition to the northern circuit, aided the formation of rain conditions.

9. The storm moved eastward to New England, attended by heavy rains in the Atlantic coast States, and with moderate rain in the Ohio Valley and the Lake region. The barometer rose considerably in the northwest, which, in conjunction with the New England high, continued to give energy to the eastern storm. The temperature rose in New England, and fell in the region north of Montana and Dakota, but remained stationary elsewhere. Heavy precipitation was reported at the following stations during the 8th or 9th: Chapel Hill, 4.80; Moncure, 3.70; Fayetteville, 1.60; Salem, 2.00; Clarksville, 2.40; Danville, 1.80; Block Island, 1.60; Albany, 1.36; Harrisburg, 1.08; Baltimore, 1.30; Hatteras, 1.68; Wilmington, 1.02; Philadelphia, 2.76; Quebec, 1.08; Montreal, 1.20; Dubois, 1.70; Ridgway, 1.63; Rowlesburg, 1.60.

10. The storm moved from the Middle States over New England to New Brunswick, attended by gales along the middle Atlantic and New England coasts, and by rain from the Upper Ohio Valley and the eastern Lake region over the middle Atlantic and New England States. Showers also occurred in the northwest, and rain fell in the middle and north Pacific coast districts. The area of high barometer extended from Manitoba over the upper Lake region; the barometer was also high on the middle Pacific coast. The temperature fell in New England, the Middle States, and the Lake region; it

rose in the west and the southwest. As a result of the heavy rains the rivers rose in many places; at Pittsburg, 11 feet, on the morning of the 10th, being 2.6 feet below the danger line; at 2 p. m. it reached 21.1 feet, the danger line being 22 feet. The water was, however, reported as falling at the head of the Alleghany and Monongahela rivers.

11. The eastern storm had moved out of the region of observation beyond Newfoundland. A disturbance of slight energy now occupied the Western and Northwestern States, with an area of high pressure covering the Middle States, and a second area of higher pressure occupying the Pacific coast. The temperature fell in the middle Atlantic and New England States, and in the middle and north Pacific coast districts, and rose in the west and northwest. Generally fair weather prevailed, except in the Missouri and extreme Upper Mississippi valleys where showers occurred.

12. The barometer was above the normal over the entire country, though relatively low in a trough extending from the Upper Lake region and Manitoba over the Upper Mississippi Valley. It was highest over New England and over the Rocky Mountain districts. The temperature rose over the Ohio Valley, the Lake region, and New England, and fell in the northwest. Showers occurred in the Ohio and Upper Mississippi Valleys and the Upper Lake region. The weather was generally fair in the other districts.

13. The storm moved eastward over the Lake region, increasing slightly in strength, attended by rain from the Lake region and New England over the Ohio Valley and Tennessee, the weather being generally fair in the other districts. The area of high pressure moved southeastward over the mountain districts and was central over Oklahoma, a fall of temperature taking place in the central valleys. The precipitation was heavy to the southward of the center of the low: at Johnstown, 1.58; Mahoning, 1.58; West Newton, 1.50.

14. The eastern storm was central southeast of New England, in consequence of which rain fell in New England and southward to the Carolinas. The northwest winds were high at some points on the coast. A trough of low pressure extended from Manitoba to northwestern Texas, with indications of development of a storm of marked intensity; at some stations the wind reached a velocity of more than 40 miles per hour. An area of high pressure to the eastward covered the western Lake region and the Ohio Valley. The pressure was also rising on the south Pacific coast. The temperature fell decidedly in the Rocky Mountain and plateau regions, but was stationary in nearly all the other districts. In spite of the fact that a very well-defined system of isobars, indicating precipitation, existed in the Missouri Valley, the region was quite free from showers. This is the second clear illustration that precipitation is not necessarily a preliminary or cause of the cyclonic circulation of the atmosphere, but may rather be a consequence of such air movements after these have been actually instituted in some other way.

15. The storm conditions in New England had undergone slight modifications, the rain and brisk northwest winds continuing to characterize this day. In the west the storm, of marked energy, had developed, central in Kansas; lowest barometer reading, 29.18 inches at Dodge City. High winds occurred around the center: 60 miles per hour at Amarillo, Tex.; 47 miles at Pueblo, Colo. Rain had now begun on the northern side of the storm; also, rain fell on the Pacific coast. The temperature fell in the Rocky Mountain districts and was nearly stationary in the other districts. Heavy precipitations in New England had caused freshets in the Hudson River and the streams of New England. Rains above 1 inch were reported during the 14th or 15th at Northfield, 1.90; Portland, Me., 2.80; Boston, 1.10; Montreal, 1.08.

16. The storm central over Kansas on the 15th advanced to Arkansas, attended by rains in the central valleys. The barometer was high over the Canadian Provinces and over the southern Rocky Mountain districts; it was low over the northern Pacific coast States. The temperature fell in the Western States and rose in the east Gulf and south Atlantic States. Rain along the New England coast, sometimes turning into snow; the freshets in the rivers still continued high. Rain also fell on the Pacific coast and heavy precipitation occurred at Keokuk, 1.06, and Des Moines, 1.22.

17. The central storm moved eastward into Georgia, accompanied by heavy precipitation. Rainfalls of 1 to 5 inches were reported from 31 stations in Tennessee, east Gulf and the south Atlantic States. The winds were not heavy, as the strength of the storm appeared to dissipate itself in rain. The barometer remained high over the St. Lawrence Valley and Lake region, and on the middle and north Pacific coasts. The temperature fell in the Southern States and rose in the northwest.

18. The Georgia storm passed off to the eastward, attended by heavy rains. Light rain fell in the Upper Missouri Valley and on the north Pacific coast. An area of high pressure extended from the Lake region southwestward to Texas. Light frosts were reported in northwestern Texas, Kansas, Colorado, and Missouri on the mornings of the 17th and 18th. The temperature fell over the Southern States and the extreme northwest, and rose from the Dakotas over the middle Rocky Mountain region.

19. No well-defined storm appeared within the region of observation. The barometer was relatively low on the south Florida coast and over eastern Montana. An area of high pressure occupied the Lake regions and the central valleys, and the pressure was also high on the north Pacific coast. Fair weather prevailed, except on the east Florida coast and at points in the Dakotas and western Minnesota, and along the Pacific coast, where showers were reported. The temperature rose 10° to 20° in the extreme northwest.

20. A storm of moderate strength developed over South Dakota, attended by showers in the Upper Missouri Valley. The barometer was highest on the north Pacific coast, and an area of high pressure extended from the Ohio Valley over the Gulf States. The temperature rose in the west and southwest and fell in the extreme northwest.

21. The storm moved eastward over the Lake region with moderate strength, attended by local rains from the Lake region over the Upper Mississippi and the Lower Missouri valleys, and the middle-western States. An area of high pressure covered the Rocky Mountain region, and the barometer was also high over the south Atlantic and east Gulf States. The temperature fell from the western Lake region over the middle and southern Rocky Mountain districts, and also over the middle Atlantic States. It rose from the eastern Lake region, over the east Gulf States, and in the northwest.

22. The storm advanced to the Lower St. Lawrence Valley, attended by rain from the Lake region over the Ohio and Mississippi valleys and the interior of the Southwestern States. An area of high pressure moved southeastward over the middle and southern Rocky Mountain districts, attended by a decided fall in temperature, and light frosts in the middle Rocky Mountain districts. The temperature also fell in the Lake region, the Ohio and Upper Mississippi valleys, and rose in the northwest.

23. The barometer was low over the St. Lawrence Valley and north of the Dakotas, and was high over the Southern and Southwestern States. The temperature fell in New England and the southwest, and rose in the west and northwest. Showers occurred in New England and the eastern Lake region, North Carolina, and Texas. Heavy precipitation was reported during the 22d or 23d at Texarkana, 2.00; Corsicana, 1.80; Weatherford, 2.00.

24. A storm of moderate intensity moved from Manitoba eastward over the upper Lake region, and an area of high pressure appeared north of Montana. The barometer continued relatively high over the south Atlantic and Gulf States. The temperature rose in the Lake region and fell in the extreme northwest. Showers occurred in the northwest, in the south Atlantic States, over Lake Superior, and in the southwest.

25. The barometer was low in the St. Lawrence Valley and over the Rocky Mountain and plateau districts. It was high over the south Atlantic States and Manitoba. The temperature rose over the eastern districts and fell in the west and northwest. Showers occurred in the southwest and in the middle Gulf States.

26. No well-defined storm was observed on the map. The barometer was low over the Rocky Mountain region and high over the upper Lakes and on the south Atlantic coast. The temperature fell in the Lake region and New England, and rose in the west and southwest. Showers occurred in the Ohio and middle and lower Mississippi valleys; also in the Gulf and south Atlantic States.

27. A storm was developing over the Lower Mississippi Valley on the morning of the 27th. The barometer was low over the plateau and Rocky Mountain districts and on the north Pacific coast. It was highest over the St. Lawrence Valley and the extreme northern Lake region. The temperature fell in New England and the southwest, and rose in the northwest. Showers occurred generally south of the Lake region, along the New England coast, in Wyoming, western Nebraska, and on the middle Pacific coast. Heavy precipitation in twenty-four hours was reported at Aberdeen, 2.00; Okolona, 2.30; Batesville, 2.30; Hernando, 2.00; Holly Springs, 2.20; Atlanta, 1.20; Rome, 1.20; Cordova, 1.40; Warrior, 1.50.

28. A storm appeared to be developing over the middle-western States; the barometer continued low over the Southern States, and was highest off the New England coast. The temperature fell in the south Atlantic States and in the northwest. Rain fell in the Atlantic coast States south of New York and in portions of the northwest. Heavy precipitation was reported at Danville, 2.00; Clarksville, 3.10.

29. The storm of moderate strength in the middle-western States continued in the same locality. The barometer remained low over the Southern States, highest off the New England coast, and high on the north Pacific coast. The temperature fell in the south Atlantic States, and rose generally in the central valleys and the Lake region. Rain fell in the Atlantic coast States south of New York and in the middle and upper Missouri and extreme upper Mississippi valleys and the Lake Superior region. Heavy precipitation reported at Sioux City, 1.34; Wilmington, 2.64; Hatteras, 1.06; Raleigh, 1.32; Norfolk, 1.48; Lander, 1.06: Omaha, 1.66; Danville, 2.00; Clarksville, 3.10.

30. The storm in the middle-western States remained stationary, diminishing in strength. The barometer fell over the middle Atlantic and New England States, and rose over the Southern States. It was highest over the Lake Superior region. The temperature rose over the middle Atlantic and New England States, and fell over the northern Lake region and the middle Rocky Mountain districts. Rain had fallen along the Atlantic coast over Lake Superior and in the Missouri Valley and Rocky Mountain districts. Heavy rain reported at 7 a. m. at Goldsboro, 1.80; Lumberton, 1.50; Newbern, 2.10; Weldon, 1.70; Alapaha, 2.20; Hatteras, 1.32; Charleston, 1.22; Jacksonville, 1.04; Valentine, 2.08; Rapid City, 1.24; Lander, 3.44; and at 7 p. m. at Newbern, 1.80.

NORTH ATLANTIC METEOROLOGY.

WEATHER AND ICE IN GREENLAND.

The following items, dated April 28, at Ivigtut, Greenland, are taken from a letter by Mrs. Peary, published in the Bulletin of the American Geographical Society:

The winter at Ivigtut has been very mild, so that it was possible to work in the open mines until January 10, when the winter commenced, but without severe frost.

We believe this season will form an exceptional one in the Arctic, and it will be possible for a ship to reach Whale Sound without much difficulty. The winter was so mild the ice did not solder and was constantly moving south; hence its early appearance (February 22) along the southwestern coast of Greenland.

Our ships have been trading to Ivigtut for the past eighteen years, and the mild winter and early appearance of ice on the coast is a rare exception.

A cablegram of September 2 from St. Johns, N. F., states that on July 15, at Holsteinberg, the *Kite* reported very little ice west of Greenland and apparently little throughout Baffin Bay.

OCEAN FOG FOR APRIL.

The limits of fog belts west of the fortieth meridian, as reported by shipmasters, are shown on Chart I by dotted shading. East of the fifty-fifth meridian fog was reported on 16 dates; between the fifty-fifth and sixty-fifth meridians, on 12 dates; and west of the sixty-fifth meridian on 15 dates. Compared with the corresponding month of the last seven years, the dates of occurrence of fog east of the fifty-fifth meridian numbered 2 more than the average; between the fifty-fifth and sixty-fifth meridians, 2 more than the average; and west of the sixty-fifth meridian, 5 more than the average. The occurrence of fog along the steamship tracks west of the fortieth meridian and at stations of the Weather Bureau along the middle Atlantic and New England coasts generally attended the approach or passage of storms.

OCEAN ICE FOR APRIL.

The following table shows the southern and eastern limits of the region within which icebergs or field ice were reported for April during the last thirteen years:

Southern limit.			Eastern limit.		
Month.	Lat. N.	Long. W.	Month.	Lat. N.	Long. W.
	° ′	° ′		° ′	° ′
April, 1883	40 49	52 06	April, 1883	48 00	43 00
April, 1884	41 26	48 46	April, 1884	45 25	43 34
April, 1885	41 40	49 50	April, 1885	44 10	39 41
April, 1886	40 51	46 39	April, 1886	47 43	39 11
April, 1887	40 02	50 04	April, 1887	48 00	38 18
April, 1888	41 33	50 00	April, 1888	47 40	49 00
April, 1889	43 57	50 30	April, 1889	47 16	43 11
April, 1890	40 00	49 40	April, 1890	47 26	35 42
April, 1891	40 01	48 24	April, 1891	45 33	43 32
April, 1892	42 46	49 37	April, 1892	48 58	44 27
April, 1893	42 28	50 14	April, 1893	46 50	46 05
April, 1894	42 00	51 10	April, 1894	44 56	44 00
April, 1895	39 22	56 08	April, 1895	47 00	45 08
Mean	41 16	51 00	Mean	46 50	42 00

The limits of the region within which icebergs or field ice were reported for April, 1895, are shown on Chart I by crosses. The southernmost ice reported, a quantity of broken field ice observed on the 28th in the position given, was about 2° south of the average southern limit, and the easternmost ice reported, several large bergs, on the 23d in the position given, was about 3½° west of the average eastern limit.

TEMPERATURE OF THE AIR.

[*In degrees Fahrenheit.*]

The distribution of the monthly mean temperature of the air over the United States and Canada is shown by the dotted isotherms on Chart II; the lines are drawn over the high irregular surface of the Rocky Mountain plateau, although the temperatures have not been reduced to sea level, and the isotherms, therefore, relate to the average surface of the country occupied by our observers; such isotherms are controlled largely by the local topography, and should be drawn and studied in connection with a contour map.

The *regular diurnal period* in temperature is shown by the hourly means given in Table IV for all stations having self-registers.

The mean temperature is given for each station in Table II, for voluntary observers, but in Table I, for the regular stations of the Weather Bureau, both the mean temperatures and the departures from the normal are given for the current month.

The *monthly mean temperature* published in Table I, for the regular stations of the Weather Bureau, is the simple mean of all the daily maxima and minima; for voluntary stations a variety of methods of computation is necessarily allowed, as shown by the notes appended to Table II.

As compared with the normal for April, the mean temperatures for the current month were decidedly in excess over the interior, but deficient in the Pacific, south Atlantic, and the Gulf States. The region of greatest excess included the following: Winnipeg, 11.3; Minnedosa, 11.2; St. Vincent, 10.6; Moorhead, 10.4; Qu'Appelle, 9.5, and Huron, 9.0.

Considered by districts, the mean temperatures for the current month show departures from normal temperatures as given in Table I. The greatest positive departure was North Dakota, 9.1; the greatest negative departure was east Gulf, 2.6.

The *years of highest and lowest mean temperature* for April are shown in Table I of the REVIEW for April, 1894. The mean temperature for the current month ranged from 2.8 to 10.6 above the normal and was the highest on record at the following places: Baker City, Williston, Bismarck, St. Vincent, Moorhead, Rapid City, Pierre, Huron, St. Paul, Minneapolis, Sioux City, North Platte, Omaha, Des Moines, Dubuque, Concordia, Topeka, Wichita, Kansas City, Columbia, Mo., and Parkersburg. It was the lowest on record only at Jupiter and Port Eads.

The *maximum and minimum temperatures* of the current month are given in Table I. The highest maximum was Yuma, 98, on the 13th; the lowest maxima, Tatoosh Island, 57, on the 12th, and Eastport, 58, on the 21st. The highest minimum was Key West, 64, on the 4th; the lowest minimum, Northfield, 16, on the 1st.

The *years of highest maximum and lowest minimum temperatures* are given in the last four columns of Table I of the current REVIEW. During the present month the maximum temperatures were the highest on record at Baker City, Red Bluff, La Crosse, Dubuque, Davenport, Keokuk, Springfield, and Columbia, Mo., St. Louis, and Harrisburg. The minimum temperatures were the lowest on record at Pysht, Eureka, Point Reyes Light, Carson City, Fresno, and Idaho Falls.

The *greatest daily range of temperature and the extreme monthly range* are given for each of the regular Weather Bureau stations in Table I, which also gives data from which may be computed the extreme monthly ranges for each station. The largest values among the greatest daily ranges were: Bismarck, 54; Havre, 50; Pierre, 49. The smallest values were: Tatoosh Island and Key West, 14; Hatteras and Block Island, 16; Nantucket and Galveston, 17. Among the extreme monthly ranges the large values were: North Platte, 66; Dubuque, 64; Bismarck, 63; Rapid City and Tucson, 62. The small values were: Key West, 20; Tatoosh Island, 24; Port Eads, 28, and San Francisco, 29.

The *accumulated monthly departures* from normal temperatures from January 1 to the end of the current month are given in the second column of the following table, and the average departures in the third column, for comparison with the departures of current conditions of vegetation from the normal conditions.

Districts.	Accumulated departures.		Districts.	Accumulated departures.	
	Total.	Average.		Total.	Average.
	°	°		°	°
North Dakota	+10.6	+2.6	New England	−4.6	−1.2
Missouri Valley	+1.9	+0.5	Middle Atlantic	−11.6	−2.9
Northern plateau	+11.3	+2.8	South Atlantic	−14.7	−3.7
North Pacific	+1.5	+0.4	Florida Peninsula	−11.4	−2.8
			East Gulf	−16.7	−4.2
			West Gulf	−13.3	−3.3
			Ohio Valley and Tenn.	−15.4	−3.8
			Lower Lakes	−11.7	−2.9
			Upper Lakes	−5.3	−1.3
			Upper Mississippi	−6.0	−1.5
			Northern slope	−1.0	−0.2
			Middle slope	−3.0	−0.8
			Southern slope (Abilene)	−12.6	−3.2
			Southern plateau	−1.9	−0.5
			Middle plateau	−4.9	−1.2
			Middle Pacific	−0.5	−0.1
			South Pacific	−1.4	−0.4

The *limit of freezing weather* is shown on Chart VI by the isotherm of minimum 32° and the limit of frost by the isotherm of minimum 40°.

FROST.

The following reports of damage by frost have been received:

Chattanooga, 4th, young and tender plants damaged; Fresno, 5th, vegetables cut down; Independence, 5th, slight damage to fruit blossoms; Ager, Cal., 5th, killed apricots; Denton, Md., 12th, killed peaches; Pinal Ranch, Ariz., 14th, peaches and plums killed.

MOISTURE.

The *quantity of moisture* in the atmosphere at any time may be expressed by means of the weight contained in a cubic foot of air, or by the tension or pressure of the vapor, or by the temperature of the dew-point. The mean dew-points for each station of the Weather Bureau, as deduced from observations made at 8 a. m. and 8 p. m., daily, are given in Table I.

The *rate of evaporation* from a special surface of water on muslin at any moment determines the temperature of the wet-bulb thermometer, but a properly constructed evaporometer may be made to give the quantity of water evaporated from a similar surface during any interval of time. Such an evaporometer, therefore, would sum up or integrate the effect of those influences that determine the temperature as given by the wet bulb; from this evaporation the *average humidity* of the air during any given interval of time may be deduced.

The *sensible temperature* experienced by the human body and attributed to the atmosphere depends not merely upon the temperature of the air, but equally upon the dryness and the wind. The temperature of the wet-bulb thermometer as obtained by the whirling apparatus used in the shaded shelter corresponds to the temperature felt by persons standing in the shade of trees or houses, exposed to a natural breeze of at least 6 miles per hour. The temperature of the wet-bulb thermometer and its depression below the dry bulb are the fundamental data for all investigations into the relation between human physiology and the atmosphere. In order to present a monthly summary of the atmospheric conditions from a hygienic and physiological point of view, Table VIII has been prepared, showing the maximum, minimum, and mean readings of the wet-bulb thermometer at 8 a. m. and 8 p. m., seventy-fifth meridian time.

PRECIPITATION.

[*In inches and hundredths.*]

The *distribution of precipitation* for the month of April, 1895, as determined by reports from about 2,500 stations, is exhibited on Chart III. The numerical details are given in Tables I, II, and III.

The precipitation for the current month was heaviest, 6 to 12 inches, on the immediate coasts of Washington and Oregon. Local rains of from 8 to 14 inches occurred in the interior of Georgia, North and South Carolina. Rainfall was least in Arizona, New Mexico, southern California, southern Nevada, Utah, and western Colorado, and averaged less than 0.5 over the greater part of the Rocky Mountain plateau region.

The *diurnal variation* is shown by Table XII, which gives the total precipitation for each hour of seventy-fifth meridian time, as deduced from self-registering gauges kept at about 43 regular stations of the Weather Bureau; of these 37 are float gauges and 3 are weighing gauges.

The *normal precipitation* for each month is shown in the Atlas of Bulletin C, entitled "Rainfall and Snow of the United States, compiled to the end of 1891, with annual, seasonal, monthly, and other charts."

As compared with the normal for April the precipitation for the current month was in excess throughout the Atlantic States; and in western Washington and in the Upper Missouri Valley. Elsewhere it was generally deficient. The large departures from the monthly normals were: Excesses, Neah Bay, 6.0; Tatoosh Island, 4.9; Raleigh, 5.4; Lander, 3.8; Tampa, 3.5. Deficits: Shreveport, 5.3; Vicksburg, 5.2; Columbia, Mo., 4.2; Fort Smith, 4.1.

The *average departure* for each district is also given in Table I. By dividing these by the respective normals for this month the following corresponding percentages are obtained (precipitation is in excess when the percentages of the normal exceeds 100):

Above the normal: New England, 128; middle Atlantic, 145; south Atlantic, 151; Florida Peninsula, 193; North Dakota, 124; northern slope, 120; north Pacific, 141.

Below the normal: east Gulf, 80; west Gulf, 30; Ohio Valley and Tennessee, 70; Lower Lake, 79; Upper Lake, 66; Upper Mississippi, 62; Missouri Valley, 62; middle slope, 35; Abilene (southern slope), 52; southern plateau, 00; middle plateau, 47; northern plateau, 58; middle Pacific, 49; south Pacific, 39.

The *years of greatest and least precipitation* are given in the REVIEW for April, 1894. The precipitation for the current month was the greatest on record at Northfield, 4.60; Block Island, 6.15; Narragansett Pier, 6.61; Raleigh, 7.95; Columbia, S. C., 5.91; Titusville, 4.50; Pensacola, 7.16; Lander, 5.71. It was the least on record at Cleveland, 1.38; Parkersburg, 1.32; Dubuque, 0.49; Davenport, 0.32; Topeka, 0.93; Kansas City, 1.19; Columbia, Mo., 1.04; Springfield, Mo., 1.10; Fort Smith, 1.41; Shreveport, 0.24; Santa Fe, 0.01; Yuma, 0.00; Red Bluff, 0.34; Salt Lake City, 0.73; Idaho Falls, 0.39.

The *total accumulated monthly departures* from normal precipitation from the beginning of the year to the end of the current month are given in the second column of the following table; the third column gives the ratio of the current accumulated precipitation to its normal value.

Districts.	Accumulated departures.	Accumulated precipitation.	Districts.	Accumulated departures.	Accumulated precipitation.
	Inches.	*Per ct.*		*Inches.*	*Per ct.*
New England	— 3.00	81	South Atlantic	+ 2.40	113
Middle Atlantic	— 0.30	97	Florida peninsula	+ 1.40	114
East Gulf	— 2.30	90	Northern slope	+ 0.70	121
West Gulf	— 5.30	64			
Ohio Valley and Tenn.	— 4.80	72			
Lower Lakes	— 3.10	70			
Upper Lakes	— 2.50	71			
North Dakota	— 0.40	89			
Upper Mississippi	— 3.80	57			
Missouri Valley	— 2.40	68			
Middle slope	— 1.50	71			
Southern slope (Abilene)	— 2.10	74			
Southern plateau	— 0.70	68			
Middle plateau	— 0.50	91			
Northern plateau	— 2.40	68			
North Pacific	— 2.00	93			
Middle Pacific	— 1.90	89			
South Pacific	— 2.00	83			

Details as to excessive precipitation are given in Tables XIII and XIV.

The total snowfall at each station is given in Table II.

HAIL.

The following are the dates on which hail fell in the respective States:

Alabama, 16, 25, 26. Arizona, 23, 25, 30. Arkansas, 5, 6, 8, 15, 24, 25, 26. California, 1, 3, 8, 9, 13, 26, 27, 28. Colorado, 20, 26, 29. Connecticut, 1, 2, 6. Delaware, 14. District of Columbia, 13. Florida, 2, 17, 25. Georgia, 2, 3, 7, 16, 24. Idaho, 10, 16, 19, 20, 27, 28, 30. Illinois, 1, 11, 12, 21. Indiana, 1, 2, 5, 12, 25. Indian Territory, 25. Iowa, 1, 5, 6, 12, 21, 30. Kansas, 5, 12, 14, 15, 25, 28, 29, 30. Kentucky, 1, 12, 13, 14. Louisiana, 1, 3, 27. Maine, 23. Maryland, 2, 13, 14. Massachusetts, 2, 25. Michigan, 1, 11, 13, 14, 22. Minnesota, 6, 19, 25, 27, 30. Mississippi, 6, 7, 16, 24, 25, 27. Missouri, 7, 12, 14, 15. Montana, 20. Nebraska, 2, 5, 6, 19, 20, 27 to 30. Nevada, 14, 15, 25, 27, 28, 29. New Hampshire, 20, 23. New Jersey, 9. New Mexico, 21, 25, 30. New York, 9, 13, 23. North Carolina, 4, 7, 8, 12, 13. North Dakota, 28. Ohio, 1, 2, 7, 8, 12, 13, 14. Oklahoma, 4, 5, 24, 30. Oregon, 1, 3, 4, 6, 8, 9, 10, 16, 26, 27. Pennsylvania, 9, 13, 22. South Carolina, 2, 16, 24. South Dakota, 5, 26, 28, 30. Tennessee, 2, 6, 7, 14, 27. Texas, 5, 6, 21 to 26, 30. Utah, 14, 28, 29. Virginia, 1, 2, 12, 13, 14. Washington, 1 to 4, 9, 10, 11, 13, 15, 16, 17. West Virginia, 2, 13, 14. Wisconsin, 1, 11, 12, 13, 19, 26. Wyoming, 27, 29, 30.

SLEET.

The following are the dates on which sleet occurred in the respective States:

California, 4. Colorado, 1, 5, 6, 14, 15, 20. Connecticut, 3, 6. Georgia, 3. Idaho, 4, 13, 16. Illinois, 1. Iowa, 1. Kansas, 1, 5, 6, 15. Massachusetts, 1. Michigan, 1. Minnesota, 10, 11.

Missouri, 6. Montana, 14. Nebraska, 6, 7. Nevada, 26 to 29. New Hampshire, 1. New Jersey, 2. New Mexico, 21. New York, 1, 15. North Dakota, 10. Ohio, 2, 15. Oklahoma, 5. Oregon, 16. Rhode Island, 2, 3. South Carolina, 2. South Dakota, 1, 6. Tennessee, 14. Utah, 29. West Virginia, 14. Wisconsin, 1, 10, 11.

SUNSHINE AND CLOUDINESS.

The sunshine is now recorded automatically at 18 regular stations of the Weather Bureau by its photographic, and at 26 by its thermal effects. The results are given in Table XI for each hour of local, not seventy-fifth meridian, time. The cloudiness is determined by numerous personal observations at all stations during the daytime, and is given in the column of "average cloudiness" in Table I; its complement or clear sky is given in the last column of Table XI.

COMPARISON OF SUNSHINE AND CLEAR SKY.

The sunshine registers give the *duration* of direct sunshine whence the percentage of possible sunshine is derived; the observer's personal estimates give the percentage of *area* of clear sky. It should not be assumed that these numbers should agree, and for comparative purposes they have been brought together, side by side, in the following table, from which it appears that, in general, the instrumental record of percentages of duration of sunshine is almost always larger than the observer's personal estimates of percentages of area of clear sky; the average excess for April, 1895, is 9 per cent for photographic records, and 12 per cent for thermometric records.

Difference between instrumental and personal observations of sunshine.

Photographic stations.	Instrumental.	Personal.	Difference.	Thermometric stations.	Instrumental.	Personal.	Difference.
Tucson, Ariz.	92	77	15	Key West, Fla.	83	69	14
Galveston, Tex.	81	81	0	Vicksburg, Miss.	81	78	3
Santa Fe, N. Mex.	80	66	14	San Francisco, Cal.	78	60	18
Salt Lake City, Utah *.	75	61	14	Salt Lake City, Utah *.	75	61	14
Denver, Colo.	69	55	14	Columbus, Ohio.	72	45	27
Dodge City, Kans.	67	61	6	St. Louis, Mo.	71	56	15
Helena, Mont.	67	60	7	Atlanta, Ga.	70	48	22
Cincinnati, Ohio.	63	51	12	Norfolk, Va.	69	67	2
Memphis, Tenn.	62	56	6	Baltimore, Md.	68	48	20
Spokane, Wash.	62	31	31	Chicago, Ill.	68	56	12
Kansas City, Mo.	60	51	9	Detroit, Mich.	67	56	11
Savannah, Ga.	60	54	6	Marquette, Mich.	67	39	28
Cleveland, Ohio.	59	51	8	New Orleans, La.	65	64	1
Portland, Oreg. *.	57	45	12	Des Moines, Iowa.	62	50	12
San Diego, Cal.	57	58	— 1	Louisville, Ky.	61	48	13
Eastport, Me.	54	38	16	Portland, Me.	61	38	23
Washington, D. C.	52	44	8	Rochester, N. Y.	61	55	6
Bismarck, N. Dak.	43	51	— 8	Little Rock, Ark.	60	51	9
				Philadelphia, Pa.	58	41	17
				Portland, Oreg. *.	57	45	12
				Buffalo, N. Y.	52	42	10
				Boston, Mass.	50	36	14
				New Haven, Conn.	50	46	4
				New York, N. Y.	49	41	8
				Seattle, Wash.	45	31	14
				Wilmington, N. C.	43	48	— 5

* Records kept by both registers.

WIND.

The *prevailing winds* for April, 1895, viz, those that were recorded most frequently at Weather Bureau stations, are shown in Table I.

Maximum wind velocities of 50 miles or more per hour were reported at regular stations of the Weather Bureau as follows (maximum velocities are averages for five minutes; extreme velocities are gusts of shorter duration, and are not given in this table):

Stations.	Date.	Velocity.	Direction.	Stations.	Date.	Velocity.	Direction.
		Miles				*Miles*	
Abilene, Tex.	5	56	nw.	Fort Canby, Wash.	13	60	s.
Amarillo, Tex.	5	84	nw.	Do.	14	71	se.
Do.	6	68	nw.	Do.	15	66	se.
Do.	7	60	n.	Do.	17	60	se.
Do.	15	68	nw.	Hatteras, N. C.	8	51	n.
Cheyenne, Wyo.	6	60	nw.	Huron, S. Dak.	5	51	nw.
Dodge City, Kans.	5	54	n.	Do.	14	56	se.
Do.	6	50	nw.	Idaho Falls, Idaho.	14	52	s.
Do.	15	64	nw.	Kittyhawk, N. C.	8	52	se.
Duluth, Minn.	21	54	nw.	Moorhead, Minn.	14	55	se.
Eastport, Me.	14	56	ne.	Nantucket, Mass.	9	50	sw.
Do.	15	60	e.	New York, N. Y.	9	50	se.
El Paso, Tex.	5	78	w.	North Platte, Nebr.	6	53	nw.
Do.	14	51	sw.	Pierre, S. Dak.	26	50	ne.
Fort Canby, Wash.	1	54	se.	Rapid City, S. Dak.	6	52	nw.
Do.	2	72	s.	Sioux City, Iowa.	28	60	nw.
Do.	3	60	s.	Walla Walla, Wash.	1	50	sw.
Do.	9	71	se.	Williston, N. Dak.	5	50	nw.
Do.	10	60	se.				

The *resultant winds*, as deduced from the personal observations made at 8 a. m. and 8 p. m., are given in Table IX. These latter resultants are also shown graphically on Chart II, in connection with the isobars based on the same system of simultaneous observation; the small figure attached to each arrow shows the number of hours that this resultant prevailed, on the assumption that each of the morning and evening observations represents one hour's duration of a wind of average velocity; these figures (or the ratio between them and the total number of observations in this month) indicate the extent to which winds from different directions counterbalanced each other.

LOCAL STORMS.

Destructive or severe local storms were reported as follows:

1st.—Louisville, Ky., thunderstorm; stock killed by lightning. Boone County, Ky., Stamford, Nebr., Pendleton, Oreg., and over eastern portions of Washington, windstorms.

2d.—Tampa, Fla., thunderstorm. Melbourne, Fla., windstorm.

5th.—Abilene, El Paso, Sulphur Springs, Bluff Dale, Fort Bliss, and Waco, Tex., and Gila, N. Mex., windstorms. Winnsboro, Tex., windstorm; 1 person killed and several injured. Amarillo, Tex., snowstorm. Chilton, Tex., hailstorm. Meade and Garden City, Kans., snowstorms. Over the southern portion of Stanton County, Kans., windstorm; cattle killed. Buffalo, Okla., snowstorm; cattle killed. Manhattan, Kans., and Madrid, Iowa, thunderstorms.

6th.—Dodge City, Kans., snowstorm; cattle killed. Deer Trail, Colo., snowstorm.

8th.—Washington, N. J., thunderstorm.

9th.—New Brunswick, Newton, and Junction, N. J., thunderstorms. Philadelphia, Pa., thunderstorm; 2 children killed by lightning. Seattle and Stillaguamish, Wash., thunderstorms. Pullman, Wash., windstorm.

10th.—Portland, Me., thunderstorm.

11th.—St. Paul, Minn., thunderstorm.

12th.—Near Nashville, Tenn., near Kirksville, Ohio, and Springfield, Mo., thunderstorms.

14th.—Concord and West Milan, N. H., rainstorms. Steele, N. Dak., windstorm.

15th.—Sarcoxie, Mo., and Colby, Kans., thunderstorms. East Lynne, Mo., and Meade, Kans., windstorms. Cherokee, Kans., windstorm; 1 person killed and 1 injured. Near Harlan, Iowa, thunderstorm; 1 person and stock killed by lightning.

16th.—Americus, Ga., and Fairford, Ala., thunderstorms. Augusta, Ga., Longshore, S. C., and Silver Creek, Wash., windstorms. Waynesboro, Palo Alto, and Agricultural College, Miss., hailstorms.

17th.—Tampa, Fla., thunderstorm.

21st.—Duluth, Minn., windstorm.

22d.—Westfield, Mass., thunderstorm; a man killed by lightning.

23d.—Ansom, Tex., windstorm.

24th.—Orange Park, Fla., thunderstorm. Benton, Tex., windstorm; 15 persons injured. Pinopolis, S. C., and Lytle, Tex., hailstorms.

25th.—Camden, Ark., hailstorm; 2 persons injured. Kirby, Ark., hailstorm. In Meeker County, Minn., thunderstorm; a man and horse killed by lightning. Near Luverne, Minn., thunderstorm; a man killed by lightning. Valley Springs, Minn., thunderstorm; a man killed by lightning.

27th.—Houma, La., thunderstorm. Paradise, Nev., windstorm.

28th.—Algona and Sioux City, Iowa, thunderstorms. Near Butlerville, Utah, thunderstorm; 1 person and 2 horses killed and 1 person injured by lightning.

29th.—Carroll, Iowa, thunderstorm; 5 persons killed by lightning. Ovid, Iowa, and Omaha, Nebr., thunderstorms.

30th.—Whitehall, Wis., thunderstorm; 1 person killed by lightning.

ATMOSPHERIC ELECTRICITY.

The statistics relative to auroras and thunderstorms are given in Table X, which shows the number of stations from which meteorological reports were received, and the number of such stations reporting thunderstorms (T) and auroras (A) in each State and on each day of the month, respectively.

The dates on which reports of thunderstorms for the whole country were most numerous were: 1st, 84; 9th, 94; 12th, 104; 13th, 91; 25th, 127; 26th, 137; 27th, 162.

Thunderstorms were most numerous in Florida, Iowa, Massachusetts, Minnesota, Missouri, Nebraska, and Ohio.

Thunderstorms were most frequent in Florida, where they were recorded on nineteen days; Iowa and Missouri, eighteen days; Nebraska, seventeen days; Georgia, Kansas, North Carolina, and Tennessee, sixteen days.

Auroras.—The evenings on which bright moonlight must have interfered with observations of faint auroras are assumed to be the four preceding and following the date of full moon, viz, from the 4th to the 12th, inclusive. On the remaining twenty-one days of this month 128 reports were received, or an average of about 6 per day. The dates on which the reported number especially exceeded this average were: 10th, 23; 11th, 47; 16th, 25; 19th, 19.

Auroras were reported by a large percentage of observers as follows: New Hampshire, 100; North Dakota, 80; Maine, 100; Minnesota, 35; Wisconsin, 33; Montana, 33; and Washington, 20.

Auroras were most frequent in: Wisconsin, on fourteen days; Minnesota, twelve days; North Dakota, eleven days; and Maine, ten days.

CANADIAN DATA—THUNDERSTORMS AND AURORAS.

Auroras were reported as follows: 1st, 2d, Winnipeg. 5th, Medicine Hat and Battleford. 9th, Winnipeg. 10th, Grand Manan, Quebec, Montreal, and Kingston. 11th, Grand Manan, Father Point, Quebec, Montreal, Kingston, Winnipeg, Minnedosa, Medicine Hat, Edmonton, and Battleford. 12th, Sydney, Charlottetown, Father Point, Minnedosa, and Prince Albert. 13th, Winnipeg, Medicine Hat, Prince Albert, and Edmonston. 16th, Sydney, Grand Manan, Yarmouth, Charlottetown, Father Point, and Port Arthur. 17th, Father Point and Medicine Hat. 18th, Father Point, Port Arthur, and Qu'Appelle. 19th, Grindstone, Yarmouth, Father Point, Winnipeg, Qu'Appelle, and Prince Albert. 20th, Father Point, Montreal, Port Arthur, Winnipeg, Minnedosa, Qu'Appelle, Medicine Hat, and Swift Current. 21st, Grindstone. 22d, Kingston. 24th, Father Point and Minnedosa. 25th, Winnipeg and Minnedosa. 26th, Quebec, Port Arthur, and Minnedosa. 27th, Quebec. 29th, Winnipeg.

Thunderstorms were reported on the 25th at Halifax and on the 26th at Yarmouth.

METEOROLOGY AND MAGNETISM.

By Prof. FRANK H. BIGELOW.

For general remarks relative to this subject see page 7 of the REVIEW for January, 1895.

The comparison of the air temperature with magnetic horizontal force is shown in detail on Chart V, and the special features of the April curves are as follows:

SPECIAL FEATURES OF THE APRIL CURVES.

It is evidently desirable to make the record of comparison between the variations of the magnetic and meteorological systems as complete as possible. The space formerly devoted to the San Antonio observatory is therefore filled by inserting the mean barometer reading of 10 northwest stations, namely, Huron, Pierre, Moorhead, Bismarck, Williston, Havre, Helena, Miles City, Rapid City, Idaho Falls, and Salt Lake City. The variations are inverted in plotting, the pressure being inverse while the temperature is direct relatively to the magnetic force. The pressures of this region are set back one day for synchronism in April and the succeeeding summer months. Thus, April 2 is written and plotted against April 1 to allow for the eastward drift of the highs and lows.

For slope the correction to Williston is −1, for Toronto −1, and for Washington −1. For reduction to the zero base-line the correction for temperature means is −5, and for magnetic force +19.

INLAND NAVIGATION.

The *extreme and average stages of water* in the rivers during the current month are given in Table VII for regular river stations of the Weather Bureau, from which it appears that none of the large rivers there recorded actually attained to the danger line during the month, but several rose nearly to that point. The principal high waters were: New Orleans on the 8th; Evansville, 20th; Pittsburg, 11th; Lynchburg, Charleston, and Circleville, 9th.

In the Delaware, Susquehanna, and Lehigh rivers ice broke up on the 9th and 10th, and the rivers were so swollen by heavy rains that Lambertville, Trenton, Flemington, Belvidere, Stroudsburg, Water Gap, Lehigh, Easton, Bordentown, Portland, all on the Delaware, and Binghamton, Susquehanna, Oakland, Sunbury, Williamsport, Wilkesbarre, all on the Susquehanna, suffered severely. The flood was the highest since 1841 at some places, but in general since 1862 in the Delaware, and since 1865 in the Susquehanna. The Hudson from Troy to Kingston was highest on the 9th and 10th. At Troy on the 10th the Hudson was 18 inches below the high-water mark of 1884; 24 below that of 1876 and 5 feet below that of February, 1857. Lake Skaneateles was one inch above the old high-water mark on the 5th.

The Merrimac River at Lowell on the 16th, 9 a. m., was 11 feet 2 inches above the dam and beyond the reach of the self-registering river gauge; at Haverhill the highest since 1869; Concord, N. H., beyond all previous record; Plymouth, N. H., within 8 inches of the flood of 1869.

The Connecticut River was highest at Holyoke on the 16th and 17th; at Turners Falls, on the 16th, 5 inches above all previous maxima; at Hartford, 25 feet 8 inches on the gauge, within 1 foot of 1869; at Hanover, N. H., 22 feet above low water.

Maine.—The Androscoggin at Livermore Falls was, on the 16th, higher than for fifty years past, exceeding "the great pumpkin flood" of 1867. The Little Androscoggin at Paris and the Presumpscot at Westbrook were highest on the 15th, exceeding the flood of 1878; at Norway the water was higher than since 1869. The Kennebec at Gardiner and the Biddeford at North Saco and as far up as Berlin, N. H., were higher than in 1843, but the absence of ice diminished the damage, although that was still quite severe. Many dams and bridges were destroyed on the 15th and 16th.

Virginia.—The James was highest at Lynchburg on the 10th, but still 2 or 3 feet below danger line. The Reed River was highest at Wytheville on the 8th, but still 2 or 3 feet below the high water of 1878. From this point down the New River and the Kanawha to the Ohio high water prevailed.

North Carolina.—The Catawba, Tar, Yadkin, and Neuse rivers were highest on the 8th, 9th, 13th, and 18th, respectively, and much damage was done and some lives lost.

STATE WEATHER SERVICES.

By Mr. JAMES E. BERRY, Chief of State Weather Service Division.

The following extracts are given in regard to the general weather conditions experienced in the several States and Territories as reported by State Weather Service Directors:

Alabama.—The weather conditions of the current April contrasted very favorably with those of the previous month. The temperature was very nearly normal and there was more than the average amount of sunshine. The rainfall was not very evenly distributed, and although it was decidedly below the average (—1.46), yet owing to the excess of the previous month nothing really suffered for want of it.

Arizona.—The temperature of the current month was about 4° above the normal with precipitation 0.4 of an inch below.

Arkansas.—From the 1st to the 26th the temperature was, with a few exceptions, generally below the normal, but from the 27th to the end of the month, it averaged about 6° per day above. The maximum of 98° reported at Pocahontas on the 30th was the highest ever recorded in the State during April. During the greater part of the month the nights were too cool for the rapid growth of vegetation and germination of seeds, but the weather was excellent for all kinds of farm work which progressed well. The precipitation was deficient (—2.69), and the germination of seeds planted late was, therefore, retarded. Showers during the last week of the month did much good and caused cotton, corn, oats, and gardens to grow nicely. The stands of all crops are reported good and the outlook for all crops very favorable. The fruit and berry crop promises an abundant yield.

California.—The average temperature for the month was 0.2° above the normal. The highest temperature, 108° was reported from Palm Springs on the 13th; and the lowest, 5°, from Bodie on the 5th. The precipitation averaged 0.96 of an inch below the normal.

Colorado.—The mean monthly temperature for the current month was 3.3° higher than the normal, while the precipitation averaged 67 per cent of the normal.

Connecticut.—(See *New England.*)

Delaware.—(See *Maryland.*)

Florida.—The mean temperature for the current month was 3° below the normal, and the precipitation 2.26 inches above. The greatest rainfall, 7.64 inches, was reported from Fort Meade.

Georgia.—The month was mild and pleasant with no storms of marked severity. There was a sharp fall in temperature on the morning of the 4th which carried the mercury below the freezing point in the most northerly counties, and resulted in light frosts as far south as the counties of Worth and Irwin. The rainfall averaged about 2.00 inches above the normal.

Idaho.—There was a decided fall in temperature on the 5th accompanied by killing frosts, particularly in the southern portion. The mean temperature for the current month was 1.5° higher than that for April of last year, while there was a deficiency in rainfall of 0.97 inch from that for the corresponding period last year.

Illinois.—The rapid increase in temperature of April over March is a marked characteristic of the State; this month, April, 1895, the increase in general warmth was nearly one-half of the March temperature. The maximum temperature for the month was 98°, and occurred at Decatur on the 30th; the minimum was 20°, and occurred at Zion on the 2d. Rainfall was largely deficient in the northern and southern sections, the general deficiency for the State being 1.47 inch, the average rainfall for the month being 2.08 inches. The month was generally highly favorable for the preparation of farm land and seeding. Frosts were common in northern and central counties until the 22d. Very little vegetation was far enough advanced to be injured.

Indiana.—The average temperature for the State during the month was 2° above the normal and the rainfall, which fell only on a few days in small quantities, was 1.36 inch below the normal. Snow fell only on two days in small quantities. Moderate thunderstorms formed on several days in localities.

Indian Territory.—(See *Oklahoma.*)

Iowa.—The mean temperature for the State for the current month was 54.2°, about 6° above the normal. The highest temperature reported was 98°, on the 24th, at Glenwood. The average rainfall was about the normal for the month. It was unequally distributed, 5.88 inches, the greatest amount reported, falling at Guthrie Center, while only 0.28 of an inch was reported from Clifton.

Kansas.—The average temperature for the current month was 58.6°, being 3.5° in excess of the normal. The average precipitation, 1.29 inch, showing a deficiency of 1.07 inch.

Kentucky.—The distribution of temperature for the month was remarkably uniform throughout the State, the mean of the central and western sections being practically the same, and only slightly in excess of that of the mountain districts. The average temperature exceeded the normal by 1.2°. The high temperatures of the last ten days of the month, with abundant sunshine, served to stimulate to a vigorous growth all vegetation which had been retarded by earlier unfavorable weather conditions. Light frosts were reported on the 14th and 15th, but resulted in only slight damage to crops. The average precipitation for the month, 3.18 inches, was less than the normal by 0.62 of an inch.

Louisiana.—The mean temperature for April, 1895, averaged over

2° below the normal mean for the month. The deficiency in the northern half of the State was about 2°, while it was nearly 3° in the southern half. Freezing temperature was reported from Liberty Hill on the 3d. There was a deficiency of 1⅛ inch in the precipitation for the State. The precipitation for the month was very unequally distributed, ranging from only ¼ inch at Shreveport to 8¼ inches at Houma. There was about 12 per cent more sunshine than usual during the month throughout the State.

Maine.—(See *New England.*)

Maryland.—The mean temperature, 52.3°, was 0.6° above the normal. The maximum, 89°, occurred on the 25th at Bel Alton, Hancock, and Popes Creek, Md., and Wilmington, Del.; and the minimum, 18°, at Sunnyside, Md., on the 11th. The average precipitation, 4.97 inches, was 1.13 inch above the normal; the greatest amount, 9.28 inches, being reported from Garrison, and the least, 1.15 inch, from Westernport.

Massachusetts.—(See *New England.*)

Michigan.—The mean temperature for the State for the month of April, 46°, was 2.1° above the normal. Each section of the State showed an excess of temperature, which was greatest in the upper peninsula and northern counties of the lower peninsula. The highest temperature recorded, 89°, occurred at Flint on the 29th, and the lowest, 17°, at Harrisville, Alcona County, on the 1st, and at Boon, Wexford County, on the 3d. The average total precipitation for the month of April, 1.52 inch, was 0.92 of an inch below the normal. It was slightly above the normal in the upper peninsula; the deficiency occurred south of the straits, and increased toward the southern part of the State.

Minnesota.—The month of April, 1895, was characterized by unusual warmth and the absence of any cold spells, together with a great deficiency in rainfall, which retarded the departure of frost in the ground and caused the top soil to become very dry. Exceedingly disagreeable duststorms were frequent, and on the 12th, 14th, and 21st were of marked severity. The soil was placed in excellent condition for rapid germination and growth by the rains of the last six days of the month, when most of the precipitation for the month occurred. At the close of the month vegetation was generally about two weeks in advance of the season's average.

Mississippi.—The mean temperature for the month of April was 65.1°, being 0.4° above the normal. The highest temperature, 102°, was reported from Rosedale on the 30th, and the lowest, 30°, from Duck Hill on the 2d. Light frost occurred over the State generally on the 3d and 4th, and heavy frost was reported in the extreme north on the 3d. The total precipitation, 2.87 inches, was 3.56 inches below the normal. The greatest amount, 7.50 inches, being reported from Corinth. Hail was reported on the 6th, 7th, 14th, 16th, 24th, 25th, 26th, and 27th. The storm of the 16th was reported as very severe at Agricultural College and Palo Alto, where some of the hailstones were an inch in diameter and did damage to tender crops.

Missouri.—The mean temperature for the State for the month of April was 2.9° above the normal. The highest temperature, 100°, being reported from Darksville on the 30th, and the lowest, 24°, at Sublet on the 2d, and Potosi on the 3d. The average precipitation was 1.94 inch, being 1.82 inch below the normal. Light snow fell at a few stations in the central and northern sections on the 1st and 2d, the heaviest fall reported being 2.5 inches at Kidder. The conditions throughout the month were very favorable for planting and the rapid advancement of farm work, but in many of the northwestern, central, and southeastern counties grasses and small grain were seriously injured by drought.

Montana.—The temperature for April, 1895, was about 3° above the normal, the average for the State being 47°. The highest daily temperature, 86°, occurred at Mussellshell on the 24th, and the lowest, 7°, at Deer Lodge on the 6th, and at Fort Keogh on the 14th. The precipitation was about 0.30 of an inch below the normal. The average for the State being 0.80 of an inch.

Nebraska.—April, 1895, was an extremely warm month, enabling farmers to bring their spring work well forward. The extremes of temperature were not great, 96° being the highest, and 15° the lowest, while the record for previous years shows a maximum temperature of 100° and a minimum of 1°. The precipitation was but slightly below the normal.

Nevada.—The mean temperature for the State was 48.2°, 0.2° below the normal. There was an abnormal amount of sunshine in the northern and northwestern portions. The precipitation, 0.42 of an inch, was much less than usual for April, being a deficiency of 0.33 of an inch. April was very well suited to the preparation of the ground for seeding.

New England.—The average temperature for April, 1895, 45.9°, is 0.9° in excess of the normal. The precipitation, 4.60 inches, shows a departure from the normal of +1.39 inch. At most places nearly all of the precipitation occurred during the first half of the month. The heavy local rains of the 8th to 10th and 13th to 15th caused the rivers and streams to overflow, which did inestimable damage through all north-central New England.

New Hampshire.—(See *New England.*)

New Jersey.—The mean temperature for the State, 49.1°, is 1.2° above the normal, and the precipitation, 4.88 inches, is 1.41 inch above the normal. The largest amount of precipitation, 7.75 inches, was reported from Junction, and the least, 3.47 inches, from Deckertown. Thunderstorms were reported on the 1st, 2d, 9th, and 22d. Hail occurred on the 9th. There was a heavy freshet in the Delaware River on the 10th, the water being higher than since 1878. Some old residents along the river assert that it was the greatest flood since 1841.

New Mexico.—The temperature during April averaged about normal. The highest reported was 93°, at Eddy, on the 29th, Rincon, on the 14th, and at Roswell, on the 28th. The lowest, 7°, occurred at Monero, on the 5th. The precipitation was very light and much below the normal for April.

New York.—The average of the mean temperature was 0.6° above the normal, and the precipitation for the month shows a departure of —0.13 of an inch. Hail fell on the 1st, 9th, 13th, and 23d, and sleet on the 1st. Thunderstorms occurred on the 1st, 9th, 20th, 22d, 25th, 26th, and 27th.

North Carolina.—The mean temperature for the month of April, 1895, was 56.9°, 0.8° below the normal, while the precipitation was very much above. The average amount for the month was 7.35 inches, being a departure of +3.51 inches. The greatest amount, 14.84 inches, was reported from Highlands, and the least, 3.09 inches, from Waynesville. Some extremely heavy rains were reported on the 7th and 8th, which caused almost unprecedented freshets in the streams, which did considerable damage in the lowlands. Killing frost was reported as late as the 19th in the western portion of the State, and on the 4th at some stations in the eastern portion.

North Dakota.—The mean temperature for the month of April, 1895, was 49.6°, a departure of +9.6°, and the precipitation was 2.23 inches, a departure from the normal of +0.55 of an inch. What promised to be a backward spring and a failure of crops resulted, owing to timely rains, in a fine growth full three weeks ahead of the average spring in this region.

Ohio.—The mean temperature for April was 1.6° above the normal, and the precipitation was 0.85 of an inch below. The snowfall was light and afforded insufficient protection to grain. Owing to the cool nights generally throughout the month and the lack of moisture the crops were retarded in growth.

Oklahoma.—The mean temperature for April was 2.6° above normal, and the precipitation, 1.24 of an inch, was 1.65 of an inch below. The month was characterized by high winds and sandstorms, the most severe of the latter occurred on the 5th. The month closed with the long drought practically unbroken.

Oregon.—April, 1895, was an ideal month for the farmers. The weather was much warmer than usual, while the precipitation was about normal. The temperature departure was +2.4°, and that for the precipitation only —0.09. This month's weather conditions were, on the whole, quite favorable to farmers and fruit growers. Light frosts were frequent. A few killing frosts occurred on the 4th, 5th, 14th, and 29th, which did little or no damage.

Pennsylvania.—The average temperature for April, 1895, 49.2°, is 1.2° above the normal, and the average total precipitation, 3.76, shows an excess of 0.48 of an inch. Thunderstorms occurred on the 1st, 9th, 13th, 14th, 25th, 26th, and 27th; hail on the 1st, 2d, and 13th; and snow on the 2d, 3d, and 15th. At the close of the month grain and grass were in good condition, but had made slow growth, and all vegetation continued unusually late and backward.

Rhode Island.—(See *New England.*)

South Carolina.—April, 1895, was cooler than usual, the most marked departures being recorded during the second decade. The rainfall was 177 per cent of the normal. The last killing frost occurred on the 4th in the extreme western counties, and the last light frost on the 19th generally throughout the State. The mean temperature, 61.4°, was 1.4° below the normal, and the precipitation, 5.55 inches, was 2.41 inches above. It was an extremely favorable month for germination and for vegetable growth generally, but the excessive rainfall hindered and delayed farming operations.

South Dakota.—The temperature for the month, 53.4°, was about 8.5° above the normal, while the precipitation was nearly normal, being only 0.09 of an inch above the average. Severe dust and sand storms occurred on the 4th, 5th, 14th, 25th, and 27th over portions of the State, the most severe and the most general occurring on the 14th. Lightning at Nashville, in Harding Co., on the 27th, killed 52 sheep. Thunderstorms occurred on the 5th, 6th, 10th, 15th, 26th, 27th, 28th, 29th, and 30th. Hail occurred on the 26th, 28th, and 30th, and sleet on the 1st, 4th, 5th, and 6th.

Tennessee.—The average temperature for the month was 58.4°, being but 0.2° below the normal, and the precipitation, 3.67 inches, showing a deficiency of 0.51 of an inch. The greatest monthly precipitation, 7.42 inches, occurred at Carthage, and least, 0.91 of an inch, at Trenton. Killing frosts were reported for the 3d, 4th, 5th, 11th, and 15th.

Texas.—The temperature on an average for the State was 0.4° below the normal. It ranged from about normal to 4.2° below over east Texas and the eastern portions of north and southwest Texas, while over other portions of the State there was an excess ranging from 0.2° to 2.2°. The precipitation was 1.58 inch below the normal for the State. There was almost an entire absence of rain during the first and second decades, while some excessive falls were reported in the last

decade. Snow occurred on the 5th at Happy and Hartley. On the 24th a severe tornado struck Lytle, doing considerable damage. Hailstones became chunks of ice and fell with a force that broke through roofs of houses, imbedded themselves in trees, killed animals, and knocked men senseless to the ground. The tornado spent its force in about fifteen minutes.

Utah.—The mean temperature for the Territory was 49.2°. The highest daily, 94°, was reported from St. George on the 20th, and the lowest, 5°, from Loa, on the 5th. The average total precipitation was 0.58 of an inch, which fell principally on the last two days of the month. The greatest amount, 5.20 inches, was recorded at Levan, and the least, trace, at Cisco, Giles, and Emery. Thunderstorms were reported on the 10th, 27th, 28th, and 29th, and hail on the 14th, 28th, and 29th.

Vermont.—(See *New England.*)

Virginia.—The average monthly mean temperature for April, 1895, was 54.4°. The maximum daily was 95°, and occurred at Bon Air on the 25th, and the minimum was 22° at Grahams Forge on the 4th. The total amount of precipitation, 4.91 inches, averaged above the normal for the State. The greatest amount, 9.61 inches, occurred at Callaville, and the least, 1.16 inches, at Abingdon. Killing frosts were reported on the 3d, 4th, 5th, 9th, 10th, 11th, 12th, 15th, 16th, 17th, 18th, and 19th, but generally little or no damage resulted from them because of backward state of vegetation.

Washington.—April, 1895, was a trifle warmer than usual, the mean temperature for the State being 1.2° above the average. The precipitation was slightly below the average and was unevenly distributed, the eastern portion receiving fully one-half less than the average, while there was an abundance in the western portion. The total precipitation, 3.36 inches, shows a departure from the average of —0.41 of an inch. A phenomenal thunderstorm visited many localities in the western part of the State on the 9th, accompanied by hail and violent wind. Considerable timber was blown down. The eastern section was visited on the 1st by a violent duststorm, the severest ever known there, which unroofed some buildings, broke windows, carried away fences, etc.

West Virginia.—The mean temperature for the month, 52.6°, was about 1½° below the normal, and the precipitation, 2.93 inches, was well distributed and very near the normal. Many frosts occurred and snow fell to a depth of 2 to 3 inches at several points.

Wisconsin.—The average temperature for the month, 47.5°, was 3.4° above the normal for April, and the precipitation, 1.29 inch, was 2.11 inches below the normal. Most of the precipitation occurred between the 6th and 13th, except in the extreme northern portion, where considerable fell near the close of the month, but in other portions very little fell during the last fifteen days.

Wyoming.—The mean temperature for the month was 46°, which was several degrees above the average for April. The precipitation, 2.36 inches, was about one-third greater than the average. The greatest amount, 7.25 inches, being reported from Fort Washakie, and the least, 0.61 of an inch, from Fort Yellowstone.

NOTES BY THE EDITOR.

OBSERVATIONS AT HONOLULU, HAWAIIAN ISLANDS.

Meteorological observations at Honolulu, Republic of Hawaii, by Curtis J. Lyons, Meteorologist to the Government Survey.

Pressure is corrected for temperature and reduced to sea level, but the gravity correction, —0.06, is still to be applied.

The absolute humidity is expressed in grains of water, per cubic foot, and is the average of four observations daily.

The average direction and force of the wind and the average cloudiness for the whole day are given unless they have varied more than usual, in which case the extremes are given. The scale of wind force is 0 to 10.

The rainfall for twenty-four hours is given as measured at 6 a. m. on the respective dates.

April, 1895.	Pressure at sea level.			Temperature.					Humidity.			Wind.		Cloudiness.	Rain measured at 6 a. m.
									Relative.						
	9 a. m.	3 p. m.	9 p. m.	6 a. m.	2 p. m.	9 p. m.	Maximum.	Minimum.	9 a. m.	9 p. m.	Absolute.	Direction.	Force.		
	Ins.	*Ins.*	*Ins.*	°	°	°	°	°	%	%					*Ins.*
1..	30.20	30.11	30.18	69	76	71	78	69	65	69	5.8	nne.	4	4-2	.00
2..	30.19	30.08	30.14	70	75	71	78	69	65	68	5.7	ene.	5	4	.00
3..	30.12	30.05	30.11	69	75	70	76	68	68	75	5.8	ne.	5	4	.01
4..	30.10	30.02	30.10	68	77	71	80	65	70	72	6.2	se,ne.	0-3	6-1	.01
5..	30.12	30.06	30.14	70	77	71	79	69	69	68	5.8	nne.	4	2	.00
6..	30.16	30.07	30.14	70	76	71	78	69	64	72	6.1	ne.	5	3	.03
7..	30.17	30.06	30.17	70	74	70	75	69	69	75	6.1	ne.	5	8-5	.05
8..	30.17	30.08	30.20	69	75	70	75	67	68	70	5.8	ene.	5	5	.09
9..	30.20	30.13	30.18	69	76	71	78	68	66	75	6.0	ene.	5	3	.02
10..	30.20	30.09	30.16	70	75	70	78	70	69	76	6.2	ne.	4	3	.00
11..	30.18	30.12	30.20	68	76	70	78	67	65	72	5.9	ne.	4	2	.03
12..	30.26	30.19	30.26	68	74	68	76	66	60	71	5.0	nne.	3	4-1	.00
13..	30.30	30.22	30.26	66	68	69	71	65	87	68	6.0	nne.	4	6	.04
14..	30.26	30.15	30.20	69	74	68	75	68	61	73	5.4	ne.	4	4	.14
15..	30.16	30.09	30.17	68	74	70	76	67	65	70	5.6	nne.	5	5	.00
16..	30.21	30.14	30.20	66	74	69	75	66	75	85	6.3	nne.	4	8	.37
17..	30.21	30.14	30.21	70	77	73	79	68	85	78	7.1	nne.	4	7	.56
18..	30.20	30.12	30.18	71	77	72	78	71	77	77	6.8	ne.	4	8	.13
19..	30.17	30.10	30.17	70	77	72	79	70	70	75	6.6	ene.	3	5	.21
20..	30.17	30.08	30.14	65	78	71	80	65	65	72	6.2	nne.	3	2	.00
21..	30.15	30.06	30.14	63	77	70	80	61	64	72	5.9	ne.	2	2	.00
22..	30.11	30.04	30.13	61	77	70	80	60	60	68	5.7	nne.	3-0	2	.00
23..	30.11	30.01	30.09	61	77	71	80	61	66	69	5.6	nne.	0-4	3	.00
24..	30.09	30.02	30.12	62	79	71	82	61	66	72	6.1	se-ne.	2	2	.00
25..	30.11	30.05	30.14	67	81	74	82	63	64	66	6.3	e.	3	2-5	.00
26..	30.13	30.05	30.13	70	79	70	82	69	61	77	6.0	nne.	3	1	.00
27..	30.13	30.05	30.11	68	81	72	82	65	62	65	6.2	nne.	2	3-1	.00
28..	30.12	30.07	30.13	68	78	73	81	67	70	70	6.6	sw.	1	2-10	.06
29..	30.16	30.08	30.17	73	81	73	83	67	70	72	6.7	ne.	2	5	.00
30..	30.21	30.12	30.23	73	81	74	82	71	63	70	6.4	ne.	4	3	.02
	30.169	30.088	30.163	68.0	76.5	70.9	78.5	66.8	67.6	72.1	6.1	.....	.....	.....	1.77

Mean temperature: 6+2+9+3 is 71.8; extreme temperatures, 83° and 60°.

On the island of Maui, 21.13 inches of rain fell in twenty-four hours on the 16th of the month; of this amount, 14.00 inches fell in four hours—from 12.30 to 4.30 p. m.

At Olaa, Hawaii, 13.65 inches fell in twenty-four hours. This precipitation was synchronous with heavy storms in Oklahoma and New England.

THE PASSAGE OF LOW AREAS OVER THE ROCKY MOUNTAINS.

On the 12th an area of high pressure was central in Kansas and the barometer had begun to fall in Arizona and British Columbia. On the 13th, p. m., pressure was lowest in Saskatchewan and a trough extended from this region to the Gulf of California; temperatures from 65° to 70° prevailed from New Mexico to Manitoba, with southeasterly winds, and temperatures from 50° to 60° prevailed over the plateau region and Pacific coast with easterly winds, except in Arizona, where 92° and 96° were reported During the 14th the trough of low pressure extended rapidly southward, and at 8 p. m. the isobar of 29.4 extended from Manitoba to Colorado. To the east and west of this trough pressures were higher, being highest, 30.1, over Lake Superior and San Francisco, respectively. On the east side southwest winds prevailed with rather high temperature, and on the west side, over the plateau regions, westerly winds with low temperatures. By the 15th, a. m., the northern portion of the area of low pressure had mostly filled up, but a small area of still lower pressure, 29.2, remained in central Kansas; this moved slowly eastward reaching eastern Kansas by 8 a. m. of the 15th and central Arkansas by 8 a. m. of the 16th.

The international maps of the Northern Hemisphere, which were published by the Weather Bureau for many years, demonstrate clearly that, in general, areas of high pressure and low pressure that first appear in the northwestern corner of the current daily weather map do not, properly speaking, originate either in Alberta or British Columbia, but are portions of a larger system of areas of high and low pressure that circulate between latitudes 40° and 70°. These highs and lows are so connected together that sometimes they may be treated as interacting cyclones and anticyclones, while at other times they are the interacting troughs and crests of waves, and again they are considered as minor episodes, like the whirlpools in a rapid stream of water. In this last case the cyclone is spoken of as a "driven eddy," although according to hydraulics, these eddies move as a whole, with only half the velocity of the average motion of the water within them. The international maps show, moreover, that when an area of low pressure or a cyclonic system of winds approaches the coast of British Columbia and Alaska it is generally moving from southwest toward the northeast, and that soon afterward an area of low pressure has developed south and east of the original center, namely in Alberta and Saskatchewan on the eastern slope of the Rocky Mountains. Several days are required for this process by which a storm dies away on the western slope while a new one develops on the eastern slope.

Generally speaking the well-defined whirl that characterized

the original storm is entirely broken up in the lower atmosphere precisely as hurricanes are often broken up in attempting to pass over the Appalachians. During this stage the original circular low becomes, temporarily, an oval or a trough, or a V-shaped depression whose apex reaches as far south as Arizona and Mexico, while its broader end opens out toward the arctic circle. It now has, temporarily, the aspect and the structure of a wave, namely, a small wave superposed upon the general barometric depression of the arctic regions or upon some great area of low pressure, such as has been called a meiobar. Under these conditions air flows in from the nearest areas of high pressure, but the inflowing air under the action of the rotation of the earth necessarily deflects to the right, forming a still further depression and prolongation southward of the trough of low pressure. The amount of this depression is large and was explained by Ferrel in 1857, Colding in 1871, and Peslin in 1869, and still more elaborately by Guldberg and Mohn, 1872. (See the "Short Memoirs" in the Smithsonian report, 1877.) The southern end of this trough eventually, and almost invariably, shows the greatest contrast of winds, temperatures, and pressures, and very soon becomes the center of a well-defined cyclonic whirl while the northern end fills up. In this way the cyclone on the west side of the mountain range gives rise to a cyclone on the east side but farther south; the intermediate trough condition is the transition period.

The original cyclone was powerful because of its existence over the smooth ocean, and endured a long time because of its moisture and clouds. The new cyclone is far less powerful because of its existence in the interior of the dry continent, and it will die away if not supplied with moisture. As it passes eastward it encounters the Appalachian range, and generally goes through a precisely similar formation of ovals and troughs and a new center on the Atlantic coast; in this new location it is abundantly supplied with moisture on the east and dry air on the west, conditions eminently favorable to its further growth by the formation of cloud and rain.

In general, the irregularities of the earth's surface prevent a long continuance of stationary waves in the lower atmosphere, but favor the formation of permanent local areas of high and low pressure. If the ultimate cause of low and high pressures be waves due to gravity, these can exist only in the upper atmosphere; in some cases they may be as permanent as the so-called standing waves behind an obstacle in the river.

The weather chart of April 15 shows that the central low pressure in Kansas was accompanied by gales of from 30 to 50 miles per hour over a region 300 miles north and south by 200 east and west; no rain was reported south and west of Dodge City, and comparatively little at any point in that region; the high winds constituting the whirlwind were, therefore, not reinforced to any extent by any thermal disturbance due to clouds and rain; thus the wind came to rest and, therefore, the barometric depression filled up as the center moved slowly eastward and southward.

THE DUSTSTORMS OF APRIL 14 AND 15.

In connection with the above-mentioned area of low pressure, numerous duststorms were reported as follows: In Oklahoma, high winds and dust or sand storms at Healdton, Alva, Ponca City, and Pond Creek on the 14th and 15th. Equally high winds and a severe duststorm were experienced on the 5th over a large part of this same State.

In Minnesota, exceeding disagreeable duststorms were frequent, those of the 12th, 14th, and 21st were especially severe.

In South Dakota, severe sand or dust storms are recorded as having occurred on the 4th, 5th, 14th, 25th, and 27th over portions of the State; the most severe in general occurred on the 14th.

In North Dakota, furious and damaging duststorms at Ellendale, Gallatin, Lakota, and Steele on the 14th.

In Colorado, the voluntary observer, Mr. W. H. Powless, at Alma reports that on the evening of April 14 the sky had a peculiar brazen color; the snow that fell was tinged with pink. Those who were out in this snow reported their clothing covered with a deposit resembling mud. From newspapers we learn that on the 15th a terrible storm of sand and rain afflicted southern and western Kansas, Oklahoma, and the Panhandle of Texas. Egyptian darkness is said to have prevailed in western Oklahoma and the Panhandle. Showers of mud fell in Oklahoma, severe lightning occurred, and crops were badly damaged. The number of cattle killed is estimated at 5,000, and a score of these were smothered. Drifts of sand 6 feet deep were reported along the railroad tracks of western Kansas. A tornado occurred near Cherokee, Kans., in the evening.

GEOLOGICAL ORIGIN OF THE DUST.

The finest dust carried along by the winds over our western plains is generally composed largely of the minute shells of diatoms and foraminifera torn up from the chalk beds of the sedimentary Niobrara deposits that extend from central Iowa to the Rocky Mountains and from Texas to Manitoba. Further details as to this soil and its relation to our duststorms are given by Prof. Samuel Calvin in his address at the Brooklyn meeting of the American Association for the Advancement of Science, August, 1894.

DUSTSTORM IN WASHINGTON.

Duststorms are not confined to the eastern slope of the Rocky Mountains, as is evident from a paragraph in the April REVIEW of the State Weather Service for Washington, where the director, Mr. George H. Salisbury, states that in the eastern section of the State there was a violent duststorm on April 1; it was the severest one ever known there and unroofed some buildings, broke windows, and carried away fences; fortunately the crops were not far enough advanced to be seriously damaged.

THE CHANGE FROM WINTER TO SUMMER.

In connection with the daily map of April 20, Mr. B. S. Pague, Local Forecast Official at Portland, Oreg., says:

> The summer type of weather conditions prevails this morning. An area of high barometric pressure which, on Tuesday evening, appeared off the northern California coast and which gradually moved northerly over western Oregon and western Washington, is central this morning over western British Columbia. This movement of the atmosphere is the first that has occurred since the fore part of last October, and it marks the commencement of summer, from a meteorological point of view. While there may, and most likely will, be a recurrence of the atmospheric movements peculiar to the winter season, yet, after the first pure summer movement, there is little possibility of any long-continued period of rainy weather. The gradual northward movement of the areas of high pressure along the coast culminating in the perfect type of summer conditions, such as prevail this morning, indicates that the storm areas are receding northward and cross the mountains far to the north, thus, indicating that a dry season is probable from now on. The rain that occurs from now until autumn will most likely be in the form of scattered showers rather than in the form of general rain.

THUNDER AND AIR PRESSURE.

Prof. H. A. Hazen states that on April 13, at 5.30 p. m., in Washington and in the open air—

> I noted a flash of lightning directly overhead. The thunder following this flash was at an interval of 4 or 5 seconds; and I noted at the same time with the thunder a very remarkable increase in the air pressure around my head. This increase in pressure was unmistakable, and was not due to the wind for the air was calm at the time. I have thought that this observation might be of some value, as I do not remember to have seen or heard of anything of the kind in the free air before.

THE WIND AND CHIMNEY DRAFT.

Sometimes, as we all know, the wind blows down the chim-

ney, but, in general, when the chimney is properly placed and the wind is steady, a strong draft up the chimney is produced. Many experiments were published by Ewbank (Jour. Franklin Inst., 3, IV, 1842, p. 104) and subsequently by a committee of the American Academy at Boston, to ascertain the best form for the top of the chimney, and the general principles underlying the production of a strong draft. It was shown that when the wind blows against the side of the chimney, and is deflected both over the top and also to the right and left around the chimney, there is left a small region of relatively low pressure at the top surface. The smoke coming up from below is pushed into this region and then flows away with the wind. If the chimney did not stand as an obstacle in the wind there would be no region of low pressure and no draft. This same principle finds an application in many other cases; thus, when one blows against the end of a hollow tube, as in whistling over a key, the small region of low pressure allows the air within the tube to expand, and a rapid series of contractions and expansions make the shrill note of the whistle.

Again, in the so-called Hagemann anemometer, which is fully described in the treatise on Meteorological Apparatus, 1887, by the editor, the amount of the diminution of pressure at the upper end of a vertical tube exposed to the wind is measured, and hence the velocity of the wind is computed. When reading an aneroid barometer in the open air and strong wind, the observer will find that it reads lower if the face of the aneroid is held fronting the wind, because the small hole at the rear of the aneroid for communicating with the outer air admits only of the low pressure in the rear of the obstacle. Many observations were made by Montigny on the upper portion of the tower of the cathedral at Antwerp, which show that in strong winds pressure is especially deficient on the leeward side of the spire. Barometers established in special meteorological observatories, where high winds prevail, will always be found to be more or less affected by the so-called suction up the chimney, and the opening of doors and windows on the windward and leeward sides. Another instance of the effect of the wind is found in the case of the ordinary rain gauge; the gauges placed in windy spots catch less than those in quiet places, because the wind bounding over the top of the gauge forms a thin layer of swiftly-moving air, and the small drops that fall more slowly than the larger ones are carried off to one side of the gauge. Thus it is that elevated gauges catch less than those located nearer to the ground where the wind is less powerful.

EFFICIENCY OF WINDMILLS AND FARMERS' TOOLS.

Everyone knows that a sharp-edged tool, for cutting, must have its edge ground with a special reference to the object that is to be cut; thus, the edge that is best adapted to cutting cloth or paper is not appropriate to hard wood, and that which is good for the hard wood will not apply to iron or stone. About twenty years ago, a German or Austrian commission made an extensive practical study of the efficiency of the ordinary woodman's axe, and reported that of all the types and models submitted the so-called American axe was the best. The ordinary competition among manufacturers is generally sufficient to ensure that the farmer will purchase a fairly good implement when he goes into the open market with the advantage of a little experience and the advice of others. There are, however, many delicate and really important points to be considered in the construction of simple, to say nothing of complex, apparatus. The principle of survival of the fittest has, perhaps, led us to the best construction of axes, hammers, rakes, scythes, hoes, and plows; but there are many expensive and important pieces of apparatus, such as reapers, mowers, windmills, and pumps, to say nothing of portable steam engines, that are needed on large farms, or the centrifugal separators used in dairies, that fail to give satisfaction because of some inherent mechanical defect. The most efficient machine is that which produces the best result with the least possible waste of power. Thus, in a coal-burning locomotive 80 per cent of the power given out in combustion is lost so far as the work of pulling the train is concerned. In a small coal oil or gas engine the loss is rather less. In some forms of windmill scarcely 50 per cent of the effective wind pressure is utilized, and in a roughly constructed water wheel even less than this. In a hydraulic ram the efficiency is very high, although the force and work done are small. It is very desirable that there be some recognized authority to come between the manufacturer and the farmer; some one who shall "standardize" any piece of apparatus when desired, and certify as to the amount of power that is lost, or as to the efficiency of the machine when working under its best possible condition. This is practically done, for example, when the Government contracts for a new steamship, cannon, or gun.

The mechanical engineers are accustomed to determine very accurately the relation between the work done and the force expended, but no arrangement has yet been organized by means of which the farmer may obtain, for a small fee, accurate information as to the efficiency of the windmills, pumps, and other apparatus used by him. Is there not here a field of usefulness? Such tests are sometimes applied, but oftentimes imperfectly, to machines that are offered in competition for prizes at State fairs, but the results apply only to those specific samples and not to others that are ordinarily found in the market. The Government has established standards by which to test and sell such material as can be measured by the yard, bushel, gallon, or pound; it has even regulated the standards for the sale of illuminating gas, and, that newest of all powers, electricity; the time may come when it will regulate the sale of other powers, and standardize the machines for the conversion of force or the doing of work, prominent among which are the windmill and the pump. Thousands of farmers are wasting valuable power and, in modern civilization, power is money.

THE TIME OF BEGINNING OF RAIN.

In the May number of the Illinois Weather Crops, Mr. Charles E. Linney, as editor, calls attention to what seems to be an important device, by Mr. George Harris, voluntary observer at New Burnside, by means of which the time of beginning of rain is registered electrically. We hope that Mr. Harris will perfect his invention and publish it for the general benefit of the service.

DO THUNDERSTORMS ADVANCE AGAINST THE WIND?

The April bulletin of the Missouri State Weather Service publishes the following interesting items by E. D. Hicks, voluntary observer at Marceline (W. 93°, N. 39.6°), in the northeastern section of the State:

There is a phenomenon connected with our rainstorms here that I have never seen in any State west of the Mississippi, and I have been in nearly all of them. It is this: Storm clouds will appear, we will say, in the west, and look extremely threatening, and one not acquainted with the country would declare we would have rain without fail, but it is not the case unless the wind is blowing directly against the storm clouds or squarely into the face of the approaching storm. If it is blowing quarterly in the least that rain cloud will surely pass around us. The wind must always blow squarely into the face of the approaching storm to insure us rain here in this high country. With the winter storms the case is reversed.

NOTE.—The very interesting generalization above recorded by Mr. Hicks is here quoted in hope that the voluntary observers in general will give us the benefit of their experience as to the relation between the direction of the wind and the path of the storm. This is a question peculiarly interesting to observers who have a free horizon. Records are much better than memory, and it is recommended that each make a

note of the direction of the wind as soon as he sees evidences of the existence of a thunderstorm or thunderhead in the distant horizon. Of course the wind observed at the early morning observation might be used, but it is more appropriate to consider the wind that is more closely associated with the afternoon thunderstorms.

The bearing of the storm cloud and the direction of the wind should be observed to within at least one-sixteenth part of the whole circumference of the horizon, that is to say, adopting the ordinary notation: north, north-northeast, northeast, east-northeast, east, etc. One class of our thunderstorms is on the front and advancing edge of a mass of relatively dense air; the density may be due to low temperature, dryness, or high pressure, or all three combined. As the front of this mass pushes southward and eastward, the lighter air in front of it, which may be quiet but is usually moving northward, is lifted up and the thunderstorms form at short intervals all along the line of contact and elevation. This mode of formation brings these thunderstorms usually somewhere in the south and east quadrant of the extensive areas of low pressure, but whether they will move toward the northeast with the rising current of lighter air, or toward the southeast with the lower current of colder air, must depend upon local circumstances, and especially on the relative masses of upper and lower air involved in any given thunderstorm. It was on this basis that thunderstorms were frequently predicted as early as the summer of 1871, and it seems evident that if the path of a storm is directly opposed to the local wind, that must be a very local peculiarity, or possibly only an occasional and exceptional occurrence.

POPULAR WORKS ON METEOROLOGY.

In reply to several inquiries by those who wish to extend their knowledge of meteorology, we take pleasure in publishing the following list for the information of meteorological observers, both regular and voluntary. The literature of meteorology easily accessible to American readers may be described as follows:

A.—The official publications of the Weather Bureau and State Weather Services.

B.—The American Meteorological Journal: A monthly review of meteorology. Edited by Prof. Robert de C. Ward, Harvard University, Cambridge, Mass.

C.—Special text-books on meteorology, of which the following are the principal ones at present available and some of which have been used by the Weather Bureau:

1. A Popular Treatise on the Winds: Comprising the general motions of the atmosphere, monsoons, cyclones, tornadoes, waterspouts, hailstorms, etc. William Ferrel. 8vo. New York, 1889, pp. xii, 408.
2. Elementary Meteorology. William Morris Davis. 8vo. Boston, 1894.
3. Modern Meteorology: An outline of the growth and present condition of some of its phases. Frank Waldo. 8vo. London and New York, 1893.
4. Meteorology: Weather and methods of forecasting. A description of meteorological instruments and river-flood predictions in the United States. Thomas Russell. 8vo. London and New York, 1895.
5. American Weather: A popular exposition of the phenomena of the weather, including chapters on hot and cold waves, blizzards, hailstorms, and tornadoes, etc. A. W. Greely. 8vo. New York, 1888.
6. Meteorology: The elements of weather and climate. H. N. Dickson. 12mo. London, 1893.
7. Meteorology, Practical and applied. John William Moore. 8vo. London, 1894.
8. Weather: A popular exposition of the nature of weather changes from day to day. Ralph Abercromby. 8vo. London, 1887.
9. Elementary Meteorology. Robert H. Scott. Second edition. 8vo. London, 1883, pp. xii, 408.
10. Weather Charts and Storm Warnings. Robert H. Scott. Third edition. London, 1887.
11. Treatise on Meteorology. Elias Loomis. 8vo. New York, 1885.

D.—Text-books on geography or physical geography, many of which have excellent chapters on meteorology, and among which the following may be specified:

1. Complete Geography. Alexander Everett Frye. 8vo. Boston, 1895.
2. Physical Geography. Ralph Stockman Tarr. New York, 1895.
3. Grammar School Geography. Rand & McNally. Chicago and New York. 1895.
4. Eclectic Physical Geography. Russell Hinman. 8vo. Cincinnati and New York, 1888.
5. Appleton's Physical Geography. W. LeConte Stevens. 4to. New York, 1887.
6. Physical Geography. Mathew F. Maury. Royal 8vo. New York and Baltimore, 1873.

METEOROLOGICAL TABLES.

[*Prepared by the Division of Records and Meteorological Data.*]

Table I gives, for about 130 Weather Bureau stations making two observations daily and for about 20 others making only the 8 p. m. observation, the data ordinarily needed for climatological studies, viz, the monthly mean pressure, the monthly means and extremes of temperature, the average conditions as to moisture, cloudiness, movement of the wind, and the departures from normals in the case of pressure, temperature, and precipitation.

Table II gives, for about 2,400 stations occupied by voluntary observers, the extreme maximum and minimum temperatures, the mean temperature deduced from the average of all the daily maxima and minima, or other readings, as indicated by the numeral following the name of the station; the total monthly precipitation, and the total depth in inches of any snow that may have fallen. When the spaces in the snow column are left blank it indicates that no snow has fallen, but when it is possible that there may have been snow of which no record has been made, that fact is indicated by leaders, thus (. . . .).

Table III gives, for about 30 Canadian stations, the mean pressure, mean temperature, total precipitation, prevailing wind, and the respective departures from normal values. Reports from Newfoundland and Bermuda are included in this table for convenience of tabulation.

Table IV gives, for 82 stations, the mean hourly temperatures deduced from thermographs of the well-known pattern manufactured by Richard Bros., Paris, described and figured in the Report of the Chief of the Weather Bureau, 1891–'92, p. 29.

Table V gives, for 67 stations, the mean hourly pressures as automatically registered by barographs of the pattern manufactured by Richard Bros., Paris, except for Washington, D. C., where Foreman's barograph is in use. Both instruments

are described in the Report of the Chief of the Weather Bureau, 1891–'92, pp. 26 and 30.

Table VI gives, for 136 stations, the arithmetical means of the hourly movements of the wind ending with the respective hours, as registered automatically by the Robinson anemometer, in conjunction with an electrical recording mechanism, described and illustrated in the Report of the Chief of the Weather Bureau, 1891–'92, p. 19.

Table VII gives the danger points, the highest, lowest, and mean stages of water in the rivers at cities and towns on the principal rivers; also the distance of the station from the river mouth along the river channel.

Table VIII gives the maximum, minimum, and mean readings of the wet-bulb thermometer for 135 stations, as determined by observations of the whirled psychrometer at 8 a. m. and 8 p. m., daily.

The difference between mean local time and seventy-fifth meridian time is also given in the table.

Table IX gives, for 133 stations, or all that make observations at 8 a. m. and 8 p. m., the four component directions and the resultant directions based on these two observations only and without considering the velocity of the wind. The total movement for the whole month, as read from the dial of the Robinson anemometer, is given for each station in Table I. By adding the four components for the stations comprised in any geographical division one may obtain the average resultant direction for that division.

Table X gives the total number of stations in each State from which meteorological reports of any kind have been received, and the number of such stations reporting thunderstorms (T) and auroras (A) on each day of the current month.

Table XI gives, for 42 stations, the percentages of hourly sunshine as derived from the automatic records made by two essentially different types of instruments, designated, respectively, the thermometric recorder and the photographic recorder. The kind of instrument used at each station is indicated in the table by the letter T or P in the column following the name of the station.

Table XII gives the records of hourly precipitation as reported by stations equipped with automatic gauges, of which 37 are known as float gauges and 7 as weighing rain and snow gauges.

Table XIII gives the record of excessive precipitation at all stations from which reports are received.

Table XIV gives a record of the heaviest rainfalls for periods of five and ten minutes and one hour, as reported by regular stations of the Weather Bureau furnished with self-registering rain gauges.

Additional information concerning the tables will be found in the January, 1895, REVIEW.

TABLE I.—*Climatological data for Weather Bureau Stations, April, 1895.*

Stations.	Elevation above sea-level, feet.	Length of record, years.	Pressure in inches. Mean pressure, 8 a. m. and 8 p. m. +2.	Mean reduced.	Departure from normal.	Temperature of the air, in degrees Fahrenheit. Mean max. and min. +2.	Departure from normal.	Maximum.	Date.	Mean maximum.	Minimum.	Date.	Mean minimum.	Greatest daily range.	Humidity and precipitation. Mean temperature of the dew-point.	Mean relative humidity, per cent.	Precipitation, in inches.	Departure from normal.	Days with .01, or more.	Wind. Total movement, miles.	Prevailing direction.	Maximum velocity. Miles per hour.	Direction.	Date.	Clear days.	Partly cloudy days.	Cloudy days.	Average cloudiness, tenths.	Monthly temperature data since opening station. Absolute maximum.	Year.	Absolute minimum.	Year.
New England.																																
Eastport	76	23	29.94	30.03	+ .14	43.4	0.0										4.16	+ 0.9														
Portland, Me	103	24	29.91	30.02	+ .10	40.4	+ 1.8	58	21	47	18	11	34	29	30	71	2.29	− 1.1	10	8,126	sw.	60	e.	15	5	15	10	6.2	78	1881	2	1874
Northfield	872	9	29.00	30.05	+ .09	42.5	− 0.9	63	19	50	33	11	35	27	36	79	5.95	+ 3.0	12	6,178	s.	44	s.	9	6	11	13	6.2	78	1881	12	1874
Boston	135	25	29.91	30.05	+ .12	40.2	+ 1.5	71	29	51	16	1	29	42	31	73	4.60	+ 2.3	10	6,413	n.	40	nw.	10	11	6	13	5.7	78	1891	− 1	1887
Nantucket	14	9	30.04	30.05	+ .09	46.0	− 0.9	80	25	54	37	11	38	28	34	67	3.65	0.0	12	7,756	e.	43	se.	9	7	7	16	6.4	85	1872	11	1874
Woods Holl	.....	18	.....	.....	.....	43.0	+ 0.8	60	26	48	29	11	38	17	38	84	2.52	− 0.3	13	9,057	sw.	50	sw.	9	11	5	14	6.2	67	1887	22	1894
Vineyard Haven	.....	9	.....	.....	.....	42.9	− 1.4	61	26	48	28	11	38	18	.....	.....	3.20	− 1.1	11	9,904	s.	48	se.	9	12	4	14	5.6	68	1877	17	1874
Block Island	27	15	30.03	30.06	+ .11	45.8	− 0.8	63	8	53	30	11	39	24	.....	.....	3.14	+ 0.7	15	.....	sw.	.....	.....	.....	9	4	17	.....	76	1891	22	1887
Narragansett Pier	.....	14	.....	.....	.....	42.4	− 1.4	59	25	47	29	11	38	16	38	83	6.15	+ 3.1	15	10,066	ne.	46	ne.	16	11	5	14	5.9	70	1885	25	1887
New Haven	107	23	29.93	30.05	+ .08	43.4	− 0.8	63	25	50	25	11	36	24	.....	.....	6.61	+ 3.4	16	.....	sw.	.....	.....	.....	13	2	15	.....	81	1886	12	1894
New London	45	25	30.03	30.08	+ .11	46.2	+ 0.4	77	25	54	28	11	38	31	36	70	3.11	− 0.6	15	6,683	n.	38	se.	9	13	4	13	5.4	83	1885	16	1874
Mid. Atlan. States.						44.6	− 1.5	68	26	51	27	11	38	25	38	80	4.51	+ 0.7	13	5,914	nw.	40	se.	9	9	8	13	6.0	79	1887	19	1874
Albany	85	22	29.96	30.03	+ .09	52.1	+ 0.4										5.12	+ 1.6														
New York	314	25	29.71	30.03	+ .07	47.1	+ 0.4	82	25	56	36	11	38	35	38	74	3.09	− 0.5	13	6,309	s.	28	s.	13	12	5	13	5.6	88	1888	13	1874
Harrisburg	377	7	29.62	30.04	+ .04	47.7	− 1.0	82	25	55	30	11	41	31	38	73	2.92	− 0.5	12	10,409	nw.	54	nw.	10	10	10	10	5.9	84	1888	20	1874
Philadelphia	117	25	29.92	30.04	+ .05	50.6	+ 0.5	84	25	59	31	11	42	34	40	70	3.67	− 0.1	10	6,175	e.	29	nw.	10	10	6	14	6.1	84	*	26	1891
New Brunswick	.....	9	.....	.....	.....	51.6	+ 1.0	84	25	60	32	11	43	31	39	68	6.14	+ 3.3	11	8,341	ne.	39	se.	8	11	3	16	5.9	91	1888	18	1874
Baltimore	179	25	29.83	30.03	+ .03	49.2	0.0	85	25	59	27	12	40	38	.....	.....	4.59	+ 0.8	12	.....	e.	.....	.....	.....	4	12	14	.....	85	1895	20	1894
Washington	112	25	29.92	30.04	+ .05	52.8	− 0.3	86	25	61	34	4	45	30	39	64	7.42	+ 4.2	11	6,306	se.	26	nw.	9	10	12	8	5.2	90	1888	23	1875
Cape Henry	.....	32	.....	.....	.....	53.8	+ 1.0	86	25	63	33	12	45	33	40	64	6.26	+ 3.1	13	6,258	ne.	28	nw.	10	11	8	11	5.6	90	1872	22	1875
Lynchburg	685	24	29.29	30.03	+ .03	54.7	− 0.9	83	25	62	39	3	47	30	.....	.....	5.59	+ 1.1	12	.....	se.	.....	.....	.....	8	11	11	.....	92	1888	28	1875
Norfolk	57	25	29.97	30.03	+ .03	56.0	− 0.2	86	25	66	32	4	46	36	43	66	5.45	+ 2.2	13	3,930	nw.	26	se.	8	11	12	7	5.1	92	1873	25	1881
S. Atlantic States.						57.8	− 1.7	84	25	66	39	4	49	33	48	80	6.07	+ 1.9	16	7,104	ne.	36	se.	8	18	7	5	3.3	93	1888	27	*
Charlotte	778	17	29.19	30.01	.00	61.1	− 0.6										5.63	+ 1.9														
Hatteras	11	15	30.03	30.04	+ .04	58.4	− 1.4	83	25	68	31	4	49	30	44	66	5.00	+ 1.3	16	5,664	sw.	42	s.	7	14	9	7	4.8	91	1888	26	1891
Kittyhawk	9	21	30.00	30.01	+ .02	58.8	+ 1.5	74	30	64	42	4	54	16	53	88	7.72	+ 2.6	12	9,795	s.	51	n.	18	9	10	11	5.7	76	1886	31	1881
Raleigh	398	9	29.62	30.04	+ .02	55.5	+ 0.7	78	25	62	38	4	49	25	49	83	4.92	0.0	14	10,612	sw.	52	se.	8	14	7	9	4.5	92	1888	29	1881
Wilmington	78	25	29.95	30.03	+ .02	57.6	+ 0.1	85	22	68	33	4	48	36	46	73	7.95	+ 5.4	17	5,043	n.	30	nw.	22	13	3	14	5.4	91	1893	30	1892
Charleston	52	25	30.00	30.03	+ .02	60.8	− 0.5	81	23	69	37	4	53	30	53	83	6.56	+ 3.4	16	7,063	s.	36	w.	9	12	5	13	5.2	90	1890	28	1875
Columbia	.....	8	.....	.....	.....	63.8	− 0.4	82	22	71	45	18	56	24	53	77	4.21	+ 0.2	12	6,389	sw.	31	n.	11	13	11	6	4.5	89	1888	32	1881
Augusta	180	24	29.83	30.02	+ .02	61.9	− 1.1	85	25	72	37	4	51	35	.....	.....	5.91	+ 2.9	12	.....	se.	.....	.....	.....	8	12	10	.....	93	1894	28	1891
Savannah	98	25	29.93	30.04	− .01	62.0	− 2.3	84	24	72	36	4	52	33	48	66	5.18	+ 1.4	9	4,192	se.	43	nw.	16	12	10	8	4.8	93	*	28	1891
Jacksonville	43	24	29.99	30.04	.00	64.6	− 1.5	83	22	74	43	4	56	29	54	77	4.43	+ 0.6	12	6,886	s.	37	nw.	2	11	11	8	4.6	89	*	29	1887
Florida Peninsula.						67.2	− 1.6	85	25	76	45	4	58	27	55	72	4.40	+ 1.3	13	6,109	se.	31	s.	8	9	9	12	5.4	91	*	33	1881
Jupiter	28	8	30.02	30.05	+ .01	70.4	− 2.6										5.94	+ 1.9														
Key West	22	25	30.04	30.06	+ .02	70.3	− 3.5	85	2	78	54	10	63	24	61	74	4.02	+ 1.4	10	7,799	s.	31	sw.	2	14	9	7	4.5	88	*	39	1891
Tampa	36	6	30.01	30.05	+ .03	74.0	− 2.0	84	30	78	64	4	70	14	64	74	1.87	− 0.6	8	8,311	e.	42	nw.	2	18	10	2	3.1	91	1881	54	1891
Titusville	44	8	30.01	30.05	+ .01	69.2	− 1.9	86	25	78	50	4	61	27	60	77	5.38	+ 3.5	8	5,516	w.	42	sw.	8	10	12	8	4.9	90	1893	54	1891
East Gulf States.						68.0	− 3.0	86	*	76	47	5	60	29	60	77	4.50	+ 2.0	10	10,114	se.	40	n.	19	15	11	4	3.5	89	*	34	1891
Atlanta	1,131	17	28.84	30.03	− .01	65.0	− 1.7										3.60	− 0.9														
Pensacola	56	16	29.97	30.03	− .01	60.4	− 1.2	81	24	69	35	4	52	30	47	68	5.20	+ 1.5	8	7,355	nw.	36	w.	14	13	4	13	5.2	88	*	25	1881
Mobile	57	25	29.97	30.03	− .01	65.6	− 2.2	81	13	73	42	4	59	23	59	82	7.16	+ 3.3	9	7,219	sw.	36	sw.	7	15	9	6	4.1	92	1887	34	1881
Montgomery	221	23	29.78	30.02	− .02	66.0	− 1.6	82	29	74	45	4	58	24	57	79	3.04	− 2.2	12	6,198	n.	29	nw.	2	12	13	5	4.5	90	1883	32	1881
Meridian	358	6	29.62	30.00	− .08	64.9	− 1.0	84	15	75	40	4	55	31	52	70	3.99	− 1.3	10	4,799	s.	32	sw.	16	9	15	6	5.0	90	*	32	1881
Vicksburg	254	24	29.71	29.97	− .04	64.0	− 1.6	84	29	76	38	3	52	28	54	77	1.44	− 1.7	6	4,240	se.	35	s.	16	13	9	8	4.8	89	1894	28	1891
New Orleans	54	25	29.96	30.02	+ .01	65.6	− 1.0	88	30	75	43	3	56	28	50	63	1.35	− 5.2	6	5,615	sw.	29	se.	5	22	6	2	2.2	92	1887	31	1881
Port Eads	.....	9	.....	.....	.....	67.8	− 1.7	87	29	76	50	9	60	23	56	73	2.58	− 2.8	6	6,370	se.	28	nw.	2	16	11	3	3.6	88	1889	38	1881
West Gulf States.						66.1	− 3.3	79	29	72	51	3	61	18	.....	.....	4.18	+ 1.1	2	.....	e.	.....	.....	.....	12	11	7	....	83	*	.....	.....
Shreveport	249	24	29.70	29.97	− .01	66.4	− 0.6										1.21	− 2.8														
Fort Smith	481	13	29.46	29.98	+ .03	65.6	− 2.0	87	28	76	39	3	55	31	50	62	0.24	− 5.3	3	5,662	s.	35	s.	5	13	7	10	4.8	96	1887	32	1881
Little Rock	302	16	29.64	29.96	− .03	61.6	− 0.7	90	29	74	32	3	50	38	48	66	1.41	− 4.1	11	5,373	e.	36	se.	5	14	5	11	4.8	94	1893	28	1891
Corpus Christi	20	9	29.97	29.99	+ .01	63.2	− 0.4	88	30	73	36	3	53	32	47	62	1.47	− 3.4	5	5,462	sw.	35	sw.	6	13	7	10	4.9	94	1893	28	1886
Galveston	42	24	29.99	30.03	− .04	70.3	+ 0.2	88	16	76	51	7	64	29	62	77	2.41	+ 0.8	3	9,663	se.	37	se.	15	10	13	7	4.8	92	1893	46	1891
Palestine	510	14	29.45	30.00	− .01	68.0	− 1.8	82	16	73	49	3	63	17	59	77	0.33	− 2.7	5	7,698	s.	33	nw.	2	24	4	2	1.9	85	1878	43	1886
San Antonio	679	18	29.28	29.99	+ .02	66.0	− 0.5	87	28	78	37	3	54	36	51	65	2.35	− 2.0	7	5,592	s.	20	s.	15	13	13	4	4.3	93	1895	36	1886
Ohio Val. & Tenn.						70.0	+ 0.5	91	15	82	47	*	58	36	48	56	0.29	− 3.1	3	5,624	se.	25	nw.	6	9	14	7	4.9	99	1894	35	1886
Chattanooga	762	17	29.22	30.03	+ .01	57.1	+ 1.6										2.77	− 1.2														
Knoxville	980	25	28.98	30.02	.00	60.0	− 0.8	82	24	70	33	4	50	35	44	64	3.64	− 1.0	11	5,685	w.	40	s.	6	11	12	7	5.0	89	1887	25	1881
Memphis	330	25	29.64	29.99	.00	58.6	0.0	84	25	69	32	4	48	37	42	60	3.36	− 1.8	9	4,013	e.	35	sw.	18	12	8	10	4.9	89	1887	24	1881
Nashville	545	25	29.40	29.99	+ .01	63.8	+ 1.5	88	30	74	38	3	54	28	48	64	2.32	− 3.2	7	5,405	se.	33	se.	6	14	9	7	4.4	90	1893	27	1881
Lexington	989	12	28.90	29.99	− .04	59.8	+ 0.2	86	30	70	32	4	50	35	46	67	3.07	− 1.9	13	5,332	nw.	48	se.	6	14	8	8	4.4	90	1894	26	*
Louisville	525	24	29.42	30.00	.00	55.8	+ 2.5	82	25	65	30	3	46	32	41	65	3.17	− 0.1	12	8,311	ne.	44	se.	13	5	11	14	6.6	87	1891	24	1889
Indianapolis	766	25	29.17	30.00	+ .01	58.1	− 1.2	85	30	68	34	4	48	35	42	61	3.10	− 1.2	10	6,365	n.	35	se.	6	12	7	11	5.2	91	1894	21	1875
Cincinnati	628	25	29.33	30.01	+ .01	55.2	− 3.1	85	30	66	31	3	45	33	41	64	1.96	− 1.6	11	4,993	ne.	30	se.	6	6	13	11	5.5	86	1894	19	1875
Columbus	824	17	29.14	30.02	− .03	55.4	− 1.7	82	25	64	31	3	46	32	42	66	2.62	− 0.5	10	5,646	se.	32	nw.	13	15	5	10	4.9	85	1873	18	1875
Pittsburg	842	25	29.12	30.03	− .03	53.3	− 2.6	83	25	63	27	3	43	35	39	64	4.12	+ 1.1	11	5,657	n.	26	e.	7	9	13	8	5.5	86	1883	15	1881
Parkersburg	638	7	29.34	30.03	− .03	53.6	− 2.7	82	25	63	28	3	45	33	44	77	1.83	− 0.9	10	5,070	n.	31	se.	7	7	11	12	6.1	89	1885	14	1875
Lower Lake Region.						54.8	− 2.8	85	25	65	28	3	44	37	45	70	1.32	− 2.1	9	4,457	e.	28	w.	13	8	11	11	6.0	90	1893	22	1892
Buffalo	690	25	29.28	30.04	+ .06	46.6	+ 2.4										1.39	− 5.5														
Oswego	335	25	29.65	30.03	+ .04	44.8	− 3.5	75	29	53	26	11	37	28	34	69	1.97	− 0.5	11	6,301	e.	34	w.	24	10	9	11	5.8	83	1883	11	1881
Rochester	523	25	29.47	30.05	+ .06	42.2	− 0.2	73	24	49	26	1	36	41	33	73	2.07	0.0	13	7,238	w.	30	se.	7	12	7	11	5.1	85	1885	13	1874
Erie	714	22	29.25	30.03	+ .05	46.0	− 2.8	78	29	54	27	*	38	41	34	66	2.04	− 0.5	12	5,543	ne.	28	nw.	23	14	8	8	4.5	90	1885	11	1879
Cleveland	740	25	29.22	30.03	+ .03	44.8	− 0.9	76	24	54	23	1	36	38	36	72	2.09	− 0.6	10	7,616	ne.	40	se.	8	9	12	9	5.3	86	1883	11	1881
Sandusky	629	17	29.34	30.03	+ .03	48.2	− 3.3	78	24	57	26	3	40	38	38	70	1.38	− 1.0	11	8,715	n.	37	w.	13	13	8	9	4.9	85	*	15	1875
Toledo	674	25	29.30	30.03	+ .03	48.8	− 2.9	82	25	57	28	11	41	36	38	71	2.25	− 0.2	10	6,559	e.	35	nw.	22	7	15	8	5.8	86	1891	14	1881
Detroit	794	25	29.24	30.02	+ .03	49.4	− 2.7	81	25	58	25	3	40	33	37	68	2.02	− 0.2	9	7,562	e.	38	nw.	13	12	7	11	5.2	85	1872	12	1875
Upper Lake Region.						48.6	− 2.6	80	25	58	25	3	39	34	36	68	1.31	− 0.9	10	7,432	ne.	37	sw.	24	14	7	9	4.4	82	1888	8	1875
Alpena	609	23	29.39	30.06	+ .06	43.5	+ 3.2										1.53	− 0.8														
Grand Haven	628	24	29.32	30.01	+ .03	40.6	− 3.6	72	21	47	23	3	34	34	33	78	2.70	+ 0.5	12	6,396	nw.	30	sw.	22	9	9	12	6.0	79	1886	− 2	1881
Marquette	734	24	29.26	30.06	+ .06	47.5	− 3.8	80	30	57	26	2	38	33	35	66	1.33	− 1.1	7	6,890	e.	32	sw.	22	12	6	12	5.5	83	1894	9	1874
Port Huron	639	21	29.34	30.05	+ .06	40.4	− 4.0	73	28	47	22	11	34	32	32	74	1.46	− 0.6	11	5,998	n.	40	s.	24	7	13	10	6.1	87	1891	3	1875
Sault Ste. Marie	642	7	29.36	30.07	+ .04	43.8	− 2.8	78	24	52	25	3	35	41	33	71	1.45	− 0.6	9	7,883	ne.	42	w.	24	9	9	12	5.5	82	1888	7	1875
Chicago	594	25	29.12	30.02	+ .04	39.9	− 3.4	70	30	48	19	11	31	38	31	75	2.58	+ 1.0	10	5,435	nw.	28	e.	28	12	6	12	5.3	82	1888	7	1875
Milwaukee	673	25	29.29	30.03	+ .04	46.3	− 0.5	81	24	53	29	3	39	40	36	71	0.86	− 2.3	7	13,162	ne.	40	e.	11	11	8	6	4.4	84	*	17	*
Green Bay	617	9	29.38	30.06	+ .07	46.0	− 2.8	77	24	54	29	2	38	34	34	68	1.48	− 1.3	9	7,291	ne.	33	nw.	12	9	11	10	5.7	82	1893	12	*
Duluth	702	25	29.26	30.04	+ .04	45.5	− 3.6	76	29	54	27	3	36	33	34	67	1.21	− 0.9	8	6,286	n.	38	w.	12	4	14	12	6.6	82	1888	14	1887
North Dakota.						41.8	+ 4.1	65	21	48	34	3	36	34	32	75	0.73	− 1.5	7	8,392	ne.	54	nw.	21	10	11	9	5.3	81	1891	3	1881
Moorhead	905	15	28.95	29.97	− .01	49.7	+ 2.1										2.06	+ 0.4														
St. Vincent	804	15	29.13	30.00	− .02	50.3	+ 10.4	82	23	63	22	1	38	44	36	63	1.46	− 0.5	9	9,274	n.	55	se.	14	14	5	11	5.1	91	1891	−13	1881
Bismarck	1,681	21	28.20	29.99	+ .02	48.2	+ 10.6	80	23	63	30	10	34	44	35	68	1.75	+ 0.5	8	6,822	n.	38	se.	14	12	6	12	5.1	90	1891	−14	1881
Williston	1,875	17	27.97	29.96	− .01	50.2	+ 8.0	84	23	65	21	2	35	54	36	64	2.53	− 0.3	9	8,046	nw.	39	s.	14	16	8	6	4.9	90	1891	1	1881
Upper Miss. Valley.						50.2	+ 7.3	76	21	63	24	1	38	41	38	49	2.52	− 1.3	7	8,016	nw.	50	nw.	5	5	17	8	5.9	92	1881	4	1888
Minneapolis	.....	6	.....	.....	.....	55.1	+ 4.5										1.81	− 1.1														
St. Paul	850	25	29.06	30.00	+ .03	53.0	+ 7.8	76	30	64	34	1	42	32	.....	.....	1.68	− 1.3	8	.....	ne.	.....	.....	.....	8	9	13	....	84	1891	16	1891
La Crosse	720	25	29.23	30.01	+ .05	52.3	+ 6.4	76	30	63	38	3	42	34	35	57	2.09	− 0.3	7	5,636	se.	33	w.	12	10	11	9	5.6	84	1887	7	1874
Davenport	613	24	29.32	29.98	.00	52.6	+ 5.5	86	30	64	35	3	41	35	35	57	1.07	− 1.0	7	5,487	n.	30	nw.	12	10	16	4	5.0	86	1895	10	1881
Des Moines	869	17	29.05	29.98	+ .02	53.4	+ 4.0	87	30	64	30	2	43	31	38	59	0.32	− 2.4	5	7,695	ne.	42	se.	6	9	12	9	5.5	87	*	14	1886
						55.4	+ 5.0	85	30	66	27	2	44	35	39	59	3.41	+ 0.8	9	6,658	se.	36	s.	29	10	10	10	5.0	89	1883	11	1881

TABLE I.—*Climatological data for Weather Bureau Stations, April*, 1895—Continued.

Stations.	Elevation above sea-level, feet.	Length of record, years	Pressure, in inches.			Temperature of the air, in degrees Fahrenheit.								Humidity and precipitation.					Wind.					Clear days.	Partly cloudy days.	Cloudy days.	Average cloudiness, tenths.	Monthly temperature data since opening station.			
			Mean pressure, 8 a. m. and 8 p. m. +2.	Mean reduced.	Departure from normal.	Mean max. and min. +2.	Departure from normal.	Maximum.	Date.	Mean maximum.	Minimum.	Date.	Mean minimum.	Greatest daily range.	Mean temperature of the dew-point.	Mean relative humidity, per cent.	Precipitation, in inches.	Departure from normal.	Days with .01, or more.	Total movement, miles.	Prevailing direction.	Maximum velocity. Miles per hour.	Maximum velocity. Direction.	Maximum velocity. Date.					Absolute maximum.	Year.	Absolute minimum	Year.
Up. Miss. Val.—Con																														
Dubuque	.....	22	.....	.....	.....	53.9	+ 5.5	88	30	66	24	2	42	32	.....	.....	0.49	— 2.3	4	.....	e.	...	.....	...	11	11	8	....	88	1895	14	*
Keokuk	613	24	29.31	29.97	+ .01	55.1	+ 3.0	88	30	65	31	3	45	28	41	65	3.38	+ 0.5	13	5,763	se.	38	w.	13	12	9	9	4.5	88	1895	20	*
Cairo	359	24	29.56	29.95	— .02	60.3	+ 1.7	88	30	70	37	3	51	32	47	66	2.75	— 1.2	13	6,558	se.	34	se.	5	13	6	11	5.3	89	1872	24	1875
Springfield, Ill.	644	16	29.29	29.98	— .01	54.9	+ 1.8	88	30	65	29	2	45	28	42	67	2.49	— 0.5	12	7,698	n.	36	s.	6	9	8	13	5.9	88	1895	19	1881
Hannibal	534	....	29.39	29.96	.....	56.1	.....	87	30	66	32	2	46	30	43	69	1.95	.....	9	7,079	se.	36	s.	5	12	8	10	5.1	....	.....	.....	.....
St. Louis	571	25	29.37	29.99	+ .02	59.8	+ 3.1	89	30	69	35	2	50	29	45	65	0.46	— 2.9	10	8,327	se.	43	s.	5	15	8	7	4.4	89	*	22	1875
Missouri Valley.						57.7	+ 5.5										1.99	— 1.2													
Columbia	.....	6	.....	.....	.....	58.8	+ 2.8	90	30	71	32	3	46	35	.....	.....	1.04	— 4.2	10	5,881	ne.	35	s.	5	7	8	15	6.9	90	*	22	1891
Kansas City	963	7	28.93	29.96	.00	59.6	+ 4.9	85	30	70	33	*	49	32	42	60	1.19	— 2.0	8	6,924	se.	37	n.	29	10	13	7	4.9	90	1893	24	1891
Springfield, Mo	1,336	10	28.54	29.96	— .02	58.5	+ 1.4	84	29	68	34	2	49	29	41	60	1.10	— 3.1	11	8,289	se.	45	se.	5	11	12	7	4.6	88	*	26	1891
Topeka	.....	8	.....	.....	.....	60.3	+ 5.0	85	28	73	32	2	48	40	.....	.....	0.93	— 1.4	7	.....	se.	.....	.....	...	14	11	5	....	97	1893	23	1891
Omaha	1,123	24	28.76	29.96	— .02	58.0	+ 6.6	86	24	69	30	2	47	34	40	58	3.56	+ 0.5	9	6,732	se.	38	n.	29	13	2	15	5.4	90	1891	6	1881
Sioux City	1,165	6	28.68	29.92	— .02	56.6	+ 7.1	85	24	69	28	2	45	36	37	57	3.20	+ 0.3	9	9,084	se.	60	nw.	28	9	13	8	5.3	93	1891	13	1890
Pierre§	1,470	19	28.36	29.92	— .07	54.9	+ 7.3	84	23	69	26	2	41	49	39	62	2.87	+ 1.1	10	9,217	e.	50	ne.	26	10	14	6	5.1	93	1891	11	1875
Huron	1,310	14	28.53	29.94	— .04	54.8	+ 9.0	83	23	70	28	2	40	43	36	59	2.08	— 0.4	11	11,207	se.	56	se.	14	7	15	8	5.4	94	1887	9	1886
Northern Slope.						48.9	+ 5.8										1.83	+ 0.3													
Havre	2,477	15	27.33	29.94	— .03	47.8	+ 3.4	80	13	63	20	18	33	50	26	49	0.62	— 0.2	4	7,405	sw.	42	nw.	5	9	15	6	4.7	84	1891	7	1881
Miles City	2,374	18	27.45	29.94	.....	51.0	+ 4.4	79	13	65	24	*	37	46	34	57	1.31	+ 0.2	6	6,110	n.	41	nw.	5	13	13	4	5.0	90	1881	14	1880
Helena	4,108	16	25.83	30.04	+ .04	47.4	+ 2.5	75	24	59	24	5	36	36	24	47	0.53	— 0.6	4	6,183	sw.	36	sw.	5	17	5	8	4.0	82	1891	6	1881
Rapid City	3,280	10	26.57	29.94	— .07	50.7	+ 5.3	83	14	63	21	2	38	39	32	53	1.53	— 0.5	6	8,536	nw.	52	nw.	6	8	13	9	5.6	87	1891	2	1883
Cheyenne	6,105	25	23.98	30.01	.00	46.1	+ 3.0	73	26	59	21	5	33	39	28	55	1.21	— 0.2	7	8,062	nw.	60	nw.	6	7	18	5	4.8	80	1874	2	1875
Lander‡	5,377	13	24.62	30.02	+ .02	46.2	+ 4.3	75	24	62	21	5	31	46	18	45	5.71	+ 3.8	5	3,678	sw.	30	w.	4	13	12	5	4.4	76	1888	2	1893
North Platte	2,841	21	27.01	29.96	— .02	53.4	+ 4.0	84	24	68	18	2	39	46	37	61	1.93	— 0.2	6	9,660	se.	53	nw.	6	10	14	6	4.9	93	1887	12	1875
Middle Slope.						55.3	+ 3.4										0.82	— 1.5													
Denver	5,287	24	24.72	30.01	+ .03	49.8	+ 1.7	76	25	63	22	*	36	38	21	43	1.19	— 0.9	7	6,154	s.	37	nw.	20	13	12	5	4.5	83	1874	4	1876
Pueblo	4,734	7	25.22	29.99	+ .05	51.5	+ 0.7	80	27	68	19	2	35	46	18	35	0.91	— 0.8	3	6,410	nw.	48	n.	15	16	5	9	4.4	84	1891	15	1893
Concordia	1,410	10	28.45	29.93	— .10	59.4	+ 6.3	88	28	73	28	2	46	44	41	59	0.68	— 2.6	6	7,063	se.	37	n.	6	18	7	5	4.2	97	1893	18	1886
Dodge City	2,523	21	27.31	29.93	— .01	57.0	+ 2.9	90	14	71	29	2	43	41	37	56	0.91	— 0.8	4	11,159	se.	64	nw.	15	16	10	4	3.9	93	1893	13	1881
Wichita	1,366	7	28.48	29.92	— .05	61.1	+ 5.3	92	29	74	33	2	48	45	44	61	0.40	— 2.6	7	7,677	s.	40	nw.	5	15	8	7	3.9	98	1893	22	1891
Oklahoma	1,289	....	28.64	29.95	.....	63.1	.....	88	28	75	36	3	51	40	48	64	0.41	.....	5	3,596	s.	40	w.	6	23	3	4	3.0	95	1893	22	1891
Southern Slope.						.....	.....										.....	.....													
Abilene	1,749	10	28.16	29.98	+ .02	65.6	+ 1.5	89	10	78	38	2	53	38	43	54	2.30	— 2.1	8	9,039	se.	56	nw.	5	13	14	3	3.5	99	1887	25	1886
Amarillo	3,691	....	26.21	29.97	.....	56.4	.....	87	28	70	24	6	42	43	28	47	1.31	.....	7	‖	s.	84	nw.	5	10	13	7	4.6	90	1889	24	1895
Southern Plateau.						62.3	+ 0.2										T.	— 0.5													
El Paso	3,813	17	26.15	29.97	.00	64.8	+ 0.5	90	14	79	31	6	50	44	7	17	T.	— 0.2	0	10,121	nw.	78	w.	5	22	7	1	1.9	98	1879	29	1882
Santa Fe	7,051	23	23.25	29.99	+ .04	49.0	+ 0.9	70	18	61	18	6	37	31	6	23	0.01	— 0.8	1	6,045	sw.	38	sw.	14	16	11	3	3.4	84	1879	11	1875
Tucson	2,390	12	27.48	29.93	+ .01	65.1	— 0.5	95	13	88	33	7	47	47	21	22	T.	— 0.2	0	3,676	sc.	30	sw.	14	20	10	0	2.3	101	1881	32	*
Yuma	141	20	29.76	29.90	— .01	70.2	— 0.3	98	13	87	45	2	54	47	35	36	0.00	— 0.1	0	5,235	w.	46	nw.	14	26	4	0	1.6	105	1876	40	1878
Independence	3,950	....	26.00	29.98	.....	57.3	.....	80	19	71	28	5	44	34	17	26	T.	.....	0	6,830	nw.	35	nw.	4	17	7	6	3.8	....	.....	.....	.....
Middle Plateau.						48.8	— 0.4										0.63	— 0.7													
Carson City	4,720	8	25.31	30.08	.....	47.2	— 1.7	76	24	62	16	5	32	45	19	36	0.29	— 0.3	2	.....	w.	....	.....	...	23	5	2	2.7	82	1888	16	1895
Winnemucca	4,340	17	25.67	30.06	+ .08	47.9	+ 0.1	78	24	63	18	6	33	44	13	33	0.88	— 0.1	3	8,005	sw.	46	sw.	1	12	10	8	4.4	83	1888	17	1888
Salt Lake City	4,345	22	25.64	30.05	+ .05	51.2	+ 0.4	79	13	63	23	5	40	37	26	43	0.73	— 1.6	6	5,538	nw.	38	w.	4	15	5	10	3.9	84	1889	19	1875
Northern Plateau.						49.4	+ 1.6										0.84	— 0.6													
Baker City	3,480	6	26.46	30.00	+ .02	47.9	+ 3.9	81	28	61	21	6	35	43	26	49	0.95	— 0.3	5	4,947	se.	38	se.	16	9	13	8	5.0	81	1895	18	1890
Idaho Falls	4,742	6	25.25	30.06	.....	45.1	+ 3.1	76	25	60	15	6	30	46	27	56	0.39	— 1.5	6	5,764	s.	52	s.	14	10	9	11	5.4	76	1895	15	1895
Spokane	1,930	15	28.00	30.05	+ .06	49.8	+ 0.7	78	25	62	27	6	38	42	28	50	0.79	— 0.4	10	4,746	sw.	36	sw.	1	4	9	17	6.9	86	1890	22	1890
Walla Walla	1,018	10	28.96	30.05	+ .05	54.7	— 0.5	86	33	66	31	5	43	36	36	52	1.23	— 0.3	7	4,536	s.	50	sw.	1	9	16	5	4.6	89	1890	29	*
N. Pac. Coast Reg.						48.5	— 0.9										5.46	+ 1.6													
East Clallam	.....	....	.....	.....	.....	45.2	.....	69	21	52	32	*	38	34	.....	.....	10.38	.....	19	.....	w.	.....	.....	...	9	2	19	....	.....	.....	.....	.....
Fort Canby	179	12	29.86	30.06	+ .02	48.3	— 0.3	69	21	54	36	4	43	19	41	81	6.16	+ 2.3	14	11,641	se.	72	s.	2	5	9	16	6.8	78	1884	35	1890
Neah Bay	.....	11	.....	.....	.....	46.6	— 2.2	64	22	54	31	20	39	27	.....	.....	11.11	+ 6.0	19	.....	w.	.....	.....	...	7	4	19	....	69	1885	28	*
Olympia	.....	18	.....	.....	.....	49.1	— 0.2	76	*	60	30	5	38	40	.....	.....	4.46	+ 1.1	15	.....	sw.	.....	.....	...	6	10	14	....	82	1890	27	*
Port Angeles	29	11	30.00	30.08	+ .01	45.5	— 0.1	62	33	53	30	5	38	33	37	76	1.77	— 0.1	12	3,881	s.	25	w.	28	9	11	10	5.7	67	1891	27	1891
Port Crescent	.....	.....	.....	.....	.....	44.9	.....	65	22	54	29	*	35	30	.....	.....	4.71	.....	9	.....	e.	.....	.....	...	11	13	6	....	.....	.....	.....	.....
Pysht	.....	.....	.....	.....	.....	45.2	.....	68	25	54	29	*	36	33	.....	.....	6.98	.....	19	.....	w.	.....	.....	...	6	3	21	....	.....	.....	.....	.....
Seattle	119	....	29.91	30.04	.....	50.0	.....	71	22	58	32	4	42	28	37	68	3.17	.....	13	4,682	s.	42	sw.	9	5	9	16	6.9	....	.....	.....	.....
Tatoosh Island	86	12	29.98	30.08	+ .01	45.6	— 1.4	57	12	50	33	4	41	14	41	83	9.62	+ 4.9	19	8,876	se.	49	sw.	1	3	7	20	7.9	64	1890	29	1890
Astoria	.....	11	.....	.....	.....	49.2	— 0.5	68	22	56	34	5	42	21	.....	.....	6.30	+ 0.4	16	.....	sw.	.....	.....	...	7	10	13	....	71	1885	32	1890
Portland, Oreg.	157	24	29.90	30.07	+ .02	51.5	— 1.7	82	22	61	32	4	42	32	37	65	1.91	— 1.3	12	6,777	nw.	46	se.	3	8	14	8	5.5	85	1880	28	1875
Roseburg	523	18	29.49	30.06	— .01	51.9	— 0.6	85	22	64	30	11	40	43	39	69	2.36	— 0.3	14	3,157	nw.	30	se.	9	11	6	13	5.6	86	1890	26	1890
Mid. Pac. C'st Reg.						54.7	— 0.8										1.27	— 1.3													
Eureka	64	9	30.06	30.12	+ .02	49.8	— 0.2	69	22	56	31	5	43	26	44	84	2.88	— 0.9	14	5,093	nw.	30	sw.	4	8	15	7	5.4	73	1891	31	1895
Red Bluff	342	18	29.71	30.07	— .06	59.1	— 1.4	93	23	70	36	5	48	39	40	58	0.34	— 2.1	7	4,822	nw.	35	nw.	4	15	9	6	3.9	93	*	34	1885
Sacramento	71	18	29.99	30.07	+ .05	58.4	— 1.1	86	22	68	41	*	48	29	45	66	0.86	— 1.9	4	6,270	sw.	28	nw.	5	11	15	4	4.2	89	1888	36	1892
San Francisco	158	25	29.95	30.11	+ .07	54.8	— 1.2	73	7	60	44	4	49	22	46	79	1.24	— 0.9	6	7,674	w.	35	w.	29	15	10	5	4.0	88	1888	40	*
Point Reyes Light	.....	7	.....	.....	.....	51.2	0.0	66	*	59	36	5	44	22	.....	.....	1.02	— 0.8	6	.....	nw.	.....	.....	...	9	5	16	....	72	1894	36	1895
S. Pac. Coast Reg.						58.9	— 1.5										0.52	— 0.8													
Fresno	332	8	29.68	30.03	+ .06	60.0	— 2.0	92	22	73	34	5	47	38	42	59	0.99	— 0.4	3	4,780	nw.	26	nw.	4	19	6	5	3.4	98	1888	34	1895
Los Angeles	330	18	29.68	30.03	— .02	58.8	— 1.2	82	7	69	41	10	48	32	46	74	0.46	— 1.2	5	2,726	w.	24	nw.	5	10	10	10	4.9	99	1888	39	*
San Diego	93	24	29.94	30.04	+ .01	57.8	— 1.2	81	7	66	44	11	50	34	50	79	0.11	— 0.8	2	3,745	w.	16	w.	14	15	11	4	4.2	93	1888	39	1875
San Luis Obispo	234	....	29.84	30.09	.....	55.6	.....	76	12	64	39	12	47	37	44	72	0.67	.....	3	5,490	nw.	28	ne.	11	14	7	9	4.5	....	.....	.....	.....

NOTE.—The data at stations having no departures are not used in computing the district averages. Letters of the alphabet denote number of days missing from the record.

* Two or more directions, dates, or years. † Received too late to be considered in departures, etc. ‡ Normals of temperature and precipitation and extremes of temperature combined with Fort Washakie records. § Normals of temperature and precipitation and extremes of temperature combined with Fort Sully records. ‖ 14,551 miles for $28\frac{7}{12}$ days.

TABLE II.—*Meteorological record of voluntary and other cooperating observers, April, 1895.*

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Alabama.	°	°	°	*Ins.*	*Ins.*
Aleo	84	38	65.2	.....	
Ashville *1	88	35	64.4	.....	
Bermuda†	86[f]	37[f]	63.6[f]	2.85	
Birmingham	85[h]	40[d]	60.8[g]	3.27	
Brewton†	88	37	63.8	4.00	
Carrollton *†1	78	41	63.6	3.71	
Citronelle†	82	46	67.2	4.65	
Claiborne Landing†	.....	.....	.....	2.00	
Collirene *1	78	46	66.2	2.95	
Cordova†	.....	.....	.....	4.68	
Daphne†	90	39	64.4	4.30	
Decatur†	85	32	62.0	2.21	
Demopolis†	.....	.....	.....	3.52	
Elba	.....	.....	.....	2.47	
Eufaula *a†	83	40	66.0	2.09	
Eufaula *c†	.....	.....	.....	2.29	
Evergreen	84	38	64.1	5.04	
Florence *a†	.....	.....	.....	3.16	
Florence *b†	85	35	62.1	3.13	
Fort Deposit†	85	39	65.3	3.19	
Gadsden†	85	33	63.2	4.25	
Greensboro†	82	38	63.6	2.76	
Healing Springs†	82	36	61.2	2.06	
Highland Home†	81	41	63.0	2.06	
Jasper†	84	31	61.4	4.87	
Livingston†	86	38	64.2	3.94	
Lock No. 4	.....	.....	.....	5.13	
Madison Station†	85	34	62.1	2.18	
Maple Grove†	.....	.....	.....	5.79	
Marion†	82	48	65.2	2.95	
Mount Willing†	84	40	64.8	4.37	
Newbern†	82	38	64.0	3.04	
Newburg†	87	33	61.6	2.46	
Newton	83	40	64.3	2.99	
Oneonto†	80	30	60.2	2.35	
Opelika†	84	39	63.8	3.18	
Oxanna *†1	80	37	60.0	3.77	
Pine Apple†	85	39	63.6	1.59	
Pushmataha†	83	40	65.4	3.90	
Rock Mills†	79*	34*	60.0*	6.39	
Scottsboro†	85	32	61.4	5.03	
Selma†	.....	.....	.....	3.22	
Starlington *†1	84	39	63.0	5.22	
Sturdevant†	.....	.....	.....	3.39	
Tallassee Falls†	.....	.....	.....	4.85	
Tuscaloosa†	85	36	63.8	2.77	
Union†	87	35	63.8	2.06	
Union Springs†	84	38	64.4	2.92	
Uniontown†	82	41	66.2	3.50	
Valley Head†	80	30	59.2	5.40	
Warrior†	.....	.....	.....	4.58	
Wetumpka	.....	.....	.....	5.39	
Wilsonville†	.....	.....	.....	3.82	
Alaska.					
Coal Harbor†	45	5	29.7	8.00	6.0
Holy Cross Mission	43	−31	16.0	0.11	0.3
Killisnoo†	48	26	36.2	4.20	14.0
Yukon Delta *1	33	−12	12.9	.....	.....
Arizona.					
Arizona Canal Co. Dam†	100	46	68.7	0.00	
Benson *a *§	95	38	66.5	0.00	
Bisbee *†1	83	30	60.2	0.20	
Buckeye†	99	40	64.8	0.00	
Calabasas†	91	26	60.0	0.00	
Casa Grande *§	96	51	72.9	0.00	
Dragoon	.....	.....	.....	0.17	
Dragoon Summit *§	85	40	65.1	0.15	
Dudleyville†	96	31	61.8	0.05	
Eagle Pass *§	.....	34	56.2	T.	
Farleys Camp†	95	34	67.8	0.00	
Flagstaff†	71	22	49.2	0.00	
Fort Apache	80	16	51.2	T.	
Fort Grant†	84	30	61.1	0.07	
Fort Huachuca	87	33	60.9	0.05	
Gila Bend *§	99	53	73.9	0.00	
Holbrook†	84	13	51.9	0.30	
Keams Canyon†	84	19	49.8	0.19	
Maricopa *§	102	38	69.1	0.00	
Mount Huachuca	84	33	59.8	0.98	
Natural Bridge†	.....	.....	.....	0.22	
Navajo *†§	.....	36	54.2	0.30	
Nogales†	95	25	65.4	0.00	
Oracle†	88	31	63.0	0.09	
Pantano *§	88	42	65.9	0.00	
Parker†	102	30	70.1	0.01	
Payson	.....	.....	.....	0.10	
Peoria†	92	40	67.2	0.00	
Phœnix *†1	92	48	74.9	0.00	
Pinal Ranch	.....	.....	.....	T.	
Red Rock	103	40	70.1	0.00	
Reymert†	97	36	67.2	0.00	
St. Helena Ranch	86	32	64.6	0.03	
San Carlos	97	27	62.4	0.00	
San Simon *§	86	39	67.8	0.00	
Show Low	.....	.....	.....	0.16	
Signal†	94	36	66.2	0.06	
Sulphur Spring Valley†	.....	.....	.....	T.	

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Arizona—Cont'd.	°	°	°	*Ins.*	*Ins.*
Texas Hill *§	99	50	75.2	0.00	
Tucson *c†	95	31	65.4	T.	
Walnut Ranch *†1§	83	30	56.2	0.00	
Whipple Barracks†	81	20	51.8	0.25	
Wilgus†	.....	.....	.....	0.10	
Willcox *§	85	42	61.3	0.00	
Arkansas.					
Arkadelphia†	.....	.....	.....	1.85	
Arkansas City†	.....	.....	.....	2.70	
Bee Branch	88	32	62.4	1.50	
Blanchard Springs†	89	31	63.3	1.05	
Brinkley†	92	34	64.4	3.20	
Camden *a†	.....	.....	.....	2.59	
Camden *b†	89	33	62.8	2.61	
Conway *1	84	40	62.4	0.71	
Corning†	93	33	61.5	1.71	
Dallas†	89	33	61.9	1.38	
Dardanelle†	.....	.....	.....	2.35	
Elon†	.....	35	.....	3.90	
Fayetteville†	87	33	60.1	1.68	
Forrest†	88	33	63.1	2.53	
Fulton†	.....	.....	.....	3.52	
Gaines Landing†	.....	.....	.....	3.10	
Helena *a†	.....	.....	.....	2.58	
Helena *b†	91	35	66.2	2.02	
Hot Springs *a	89	35	64.2	2.22	
Hot Springs *b	.....	.....	.....	2.12	
Hot Springs (near)	.....	.....	.....	2.62	
Keesees Ferry†	91	30	61.8	1.58	
Kirby†	85	33	63.2	3.00	
La Crosse†	87	35	61.7	2.32	
Lonoke *1	90	38	66.2	1.63	
Luna Landing *§	85	39	64.9	1.60	
Madding§	.....	.....	62.0	1.81	
Malvern†	92	31	63.4	2.06	
Mossville	82	34	59.8	1.78	
Mount Nebo†	77	37	57.6	1.39	
New Gascony *1	85*	39[d]	63.8*	2.11	
Newport *a†	.....	.....	.....	1.90	
Newport *b†	90	33	63.7	1.89	
Newport *c†	89	33	62.0	1.69	
Osceola†	87	34	62.2	1.73	
Ozark†	92	37	64.4	1.97	
Pine Bluff	90	35	65.1	1.26	
Pocahontas†	98	33	64.0	1.88	
Rison†	89	32	63.9	1.09	
Rogers†	88	31	59.7	1.40	
Russellville†	88	34	63.0	1.48	
Searcy	95	38	65.6	2.04	
Stuttgart†	88	37	64.2	1.31	
Texarkana†	88	40	67.8	3.10	
Washington†	88	38	64.2	2.82	
Wiggs	.....	.....	.....	2.25	
Winslow†	83	35	59.4	1.83	
Witts Springs†	.....	.....	.....	1.30	
California.					
Adin	80	20	46.7	1.31	
Ager	90	24	53.7	0.33	
Agnew	78	31	53.4	1.88	
Arlington Heights	87	38	59.1	0.23	
Athlone *§	88	55	67.5	0.65	
Ballast Point L. H	.....	.....	.....	0.09	
Barstow†	89	25	57.2	0.00	
Bear Valley†	.....	.....	.....	3.25	11.5
Berkeley	72	40	55.0	2.30	
Bishop†	82	27	54.1	0.18	
Bishop Creek *§	82	40	61.7	0.29	
Boca *§	90	17	38.8	0.70	7.0
Bodie†	64	5	33.8	0.73	7.5
Borden *§	85	42	62.3	0.30	
Caliente *§	86	43	61.6	0.85	
Calloway Canal†	.....	.....	.....	0.30	
Cape Mendocino L. H	.....	.....	.....	2.93	
Cedarville†	78	20	47.5	0.66	2.5
Centerville *§	85	.....	59.9	1.73	
Chicago Park *1	82	28	52.4	3.87	
Chino *†§	77	45	58.9	0.31	
Chico *§	92	40	62.2	3.25	
Cisco *§	50	27	39.7	2.60	26.0
Claremont†	80	36	56.0	1.23	
Cloverdale *1	90	38	60.2	2.00	
Colegrove	.....	.....	.....	0.50	
Corning *§	92	40	60.9	0.90	
Crescent City†	80	33	50.5	4.35	
Crescent City L. H	.....	.....	.....	5.33	
Davisville *b	93	40	63.1	0.65	
Delano *§	93	42	63.2	0 31	
Delta *§	94	35	58.1	1.71	
Drytown	89	30	56.3	3.64	
Dunnigan *§	88	46	64.0	1.46	
Durham *1	84	36	57.8	2.66	
East Brother L. H	.....	.....	.....	0.16	
Edgwood *§	79	26	48.5	0.08	
Edmanton *1	72	19	42.1	3.80	6.0
Escondido	85	34	58.3	0.50	
Evergreen	.....	.....	.....	2.02	
Fall Brook *1	82	44	56.5	0.61	

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
California—Cont'd.	°	°	°	*Ins.*	*Ins.*
Folsom City *b *1	92	40	59.2	2.05	
Fordyce Dam†	.....	.....	.....	3.29	32.0
Fort Ross	.....	.....	.....	2.60	
Fort Tejon	.....	.....	.....	1.42	
Fremontville *1	82	45	57.8	0.26	
Georgetown†	83	30	53.8	4.77	
Glendora	.....	.....	.....	1.67	
Goshen *§	92	34	61.3	0.35	
Grass Valley	.....	.....	.....	3.38	
Greenville†	81	19	47.0	2.29	0.5
Healdsburg *1	82	34	55.0	1.37	
Hendersons Ranch	.....	.....	.....	0.10	
Hollister *a	79	30	55.8	1.34	
Hueneme	.....	.....	.....	0.24	
Humboldt L. H	.....	.....	.....	2.72	
Hydesville†	80	28	50.8	1.94	
Indio *§	102	44	76.9	0.00	
Iowa Hill *1	84	34	54.9	3.93	
Jackson	78	32	52.0	3.92	
Jolon	.....	.....	.....	0.85	
Julian†	90	30	54.1	0.95	
Keeler *§	88	43	63.1	0.25	
Keene *§	82	30	54.7	1.95	
Kennedy Gold Mine	84	31	55.2	5.08	
Kernville	.....	.....	.....	0.37	
King City *§	92	38	61.8	0.40	
Kingsburg *§	90	43	63.0	0.58	
Kono Tayee	81	32	56.0	0.98	
Lagrange *§	92	34	60.2	1.40	
La Porte *†1	63	21	41.4	4.00	24.0
Lemoore *a *§	90	40	61.8	0.33	
Lick Observatory†	74	24	47.2	2.30	
Lime Kiln	95	31	61.4	.....	
Lime Point L. H	.....	.....	.....	1.25	
Lodi	87	38	57.6	1.34	
Los Alamos†	.....	.....	.....	0.43	
Los Gatos *b	78	40	54.6	2.87	
McMullin *1	94	40	63.2	.....	
Malakoff Mine *1	84	28	52.8	5.18	
Mammoth Tank *§	98	54	76.3	0.00	
Manzana	83	29	54.7	0.08	
Mare Island L. H	.....	.....	.....	1.72	
Mariposa *1	84	37	56.9	3.08	
Merced *§	89	42	58.5	0.50	
Middletown *†1	92	32	55.0	1.77	
Mills College	.....	.....	.....	1.47	
Milton (near) *1	95	32	61.5	2.91	
Modesto *§	87	40	59.2	1.17	
Mohave *§	89	40	59.9	0.00	
Mokelumne Hill *§	.....	32	53.3	4.03	
Monterey *§	70	36	55.9	0.89	
Mountain View	.....	.....	.....	0.66	
Mount Glenwood *1	89	48	69.7	1.41	
Mutah Flat	.....	.....	.....	0.00	
Napa *b	85	39	58.4	1.11	
Needles†	97	47	71.9	0.09	
Nevada City†	87	25	51.1	3.82	
Newcastle *a†	85	30	55.6	2.49	
Newhall *§	87	42	59.1	0.39	
Nordhoff†	85	34	57.4	0.33	
Oakland *a	79	40	56.4	1.93	
Ogilby *§	102	58	75.6	0.00	
Oleta *1	80	35	50.5	4.25	
Ontario *b	85	50	63.2	0.73	
Orangevale†	88	37	60.2	1.54	
Orland *§	98	44	60.8	1.34	
Ormonde†	.....	.....	.....	4.16	
Oroville *b	74	36	55.8	2.65	
Palermo†	91	32	59.3	1.96	
Pasadena	81	40	58.5	0.61	
Paso Robles *b	82	31	55.4	0.48	
Petaluma *1	82	43	56.7	0.61	
Piedras Blancas L. H	.....	.....	.....	0.94	
Pigeon Point L. H	.....	.....	.....	1.57	
Pilot Creek	.....	.....	.....	4.36	6.0
Placerville *b	81	26	51.8	4.75	
Point Ano Nuevo L. H	.....	.....	.....	1.00	
Point Arena L. H	.....	.....	.....	2.05	
Point Bonita L. H	.....	.....	.....	1.38	
Point Conception L. H	.....	.....	.....	0.43	
Point Fermin L. H	.....	.....	.....	0.13	
Point George L. H	.....	.....	.....	2.66	
Point Hueneme L. H	.....	.....	.....	0.19	
Point Lobos	66	44	52.8	1.09	
Point Loma L. H	.....	.....	.....	0.10	
Point Montara L. H	.....	.....	.....	1.58	
Point Pinos L. H	.....	.....	.....	1.55	
Point Reyes L. H	.....	.....	.....	1.02	
Point Sur L. H	.....	.....	.....	1.89	
Pomona (near)	88	38	61.6	0.66	
Portersville *§	90	44	64.6	0.41	
Poway *§	.....	42	54.0	0.46	
Quincy *§	78	23	48.2	2.09	
Ravenna *§	88	40	57.1	0.00	
Redding *b†	90	34	58.2	0.99	
Redlands *a	.....	.....	.....	1.37	
Reedley (near) *1	90	43	62.3	0.55	

TABLE II.—*Meteorological record of voluntary and other cooperating observers*—Continued.

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
California—Cont'd.	°	°	°	*Ins.*	*Ins.*
Represa	82	30	56.1	2.26	
Rio Vista	89	34	57.7	0.91	
Riverside†	88	38	60.6	0.25	
Roe Island L. H	.....	.....	.....	0.85	
Rosewood	92	30	57.2	1.26	
Sacramento *a*	84	39	59.4	0.90	
Salinas	.....	.....	.....	0.94	
Salton*§	105	58	80.1	0.00	
San Bernardino†	.....	.....	.....	0.64	
San Jacinto†	89	31	58.4	0.51	
San Jose *b*	82	26	54.8	2.05	
San Leandro*†	77	45	58.4	1.96	
San Luis L. H	.....	.....	.....	0.91	
San Luis Obispo *a*	.....	.....	.....	0.70	
San Mateo*§	75	46	58.4	1.61	
San Miguel*§	83	44	59.5	0.47	
San Miguel Island†	77	44	55.6	0.10	
San Rafael†	81	33	54.6	0.91	
Santa Ana*§	86	50	63.5	0.60	
Santa Barbara *a*	78	43	57.5	0.46	
Santa Barbara L. H	.....	.....	.....	0.38	
Santa Clara *a*§	80	37	55.8	1.94	
Santa Clara *b*	87	32	57.5	1.92	
Santa Cruz *b*†	79	36	57.2	2.02	
Santa Cruz L. H	.....	.....	.....	1.88	
Santa Maria	80	39	56.8	0.53	
Santa Monica*§	70	45	56.3	0.30	
Santa Paula *b*†	79	35	52.8	0.30	
Santa Rosa*§	85	39	59.4	1.35	
Shasta Springs†	74	38	50.4	3.06	
Skye Valley	.....	.....	.....	0.42	
Sneddens Ranch	.....	.....	.....	0.11	
S. E. Farallone L. H	.....	.....	.....	0.48	
Stanford University	79	38	54.8	1.55	
Stockton *a*	85	39	57.8	0.63	
Summerdale†	.....	.....	.....	2.32	.....
Susanville†	79	26	50.7	0.50	
Sutter Creek*§	80	25	50.5	3.95	
Tecarte Dam*¶	83	32	47.3	0.51	
Tehama*§	94	40	58.0	0.48	
Tejon Ranch	.....	.....	.....	1.11	
Templeton*§	80	45	59.9	0.81	
Trinidad L. H	.....	.....	.....	2.50	
Truckee*§	70	12	38.4	0.50	
Tulare *b*	.....	.....	.....	0.77	
Tulare *c*	94	28	61.2	0.60	
Turlock *b*†	88	32	57.2	1.07	
Ukiah†	86	27	53.2	1.36	
Upperlake	87	33	55.2	1.41	
Upper Mattole*‖	90	32	52.0	6.81	
Vacaville *a*‖	90	45	59.2	2.08	
Ventura†	78	41	57.2	0.47	
Volcano Springs*§	106	65	83.9	0.00	
Walnut Creek	90	28	57.3	1.06	
Wenrich Ranch	.....	.....	.....	0.36	
West Point†	.....	.....	.....	3.44	
Wheatland	91	34	58.5	1.34	
Williams*§	91	38	60.9	0.75	
Willows *b*§	87	45	61.8	0.90	
Wilmington*§	72	50	62.6	T.	
Wire Bridge*§	87	35	58.8	3.46	
Yerba Buena L. H	.....	.....	.....	1.13	
Yreka†	84	22	50.4	0.81	
Yuba City*§	84	42	61.7	1.00	
Engineers Quarters‡	.....	.....	.....	1.31	
Morses House‡	.....	.....	.....	2.91	
Grass Valley‡	.....	.....	.....	1.92	
Deep Creek‡	.....	.....	.....	1.36	
Holcomb Creek‡	.....	.....	.....	0.62	
Squirrel Inn‡	.....	.....	.....	2.53	
Green Valley‡	.....	.....	.....	1.24	5.5
Tunnel No. 2‡	.....	.....	.....	0.86	
Colorado.					
Alma†	56	— 8	30.8	0.82	.....
Antlers†	80	21	49.0	0.35	.....
Arkins	.....	.....	.....	1.89	.....
Boulder†	76	26	52.4	1.89	T.
Box Elder	.....	.....	.....	0.99	.....
Breckenridge†	56	—12	23.7	1.88	18.8
Byers*‖	78	19	42.0	.....	.....
Canyon†	80	18	51.6	1.31	4.0
Capps	.....	.....	.....	1.30	3.0
Climax *†‖	46	— 4	25.1	4.40	44.0
Collbran	.....	.....	.....	0.52	1.0
Colorado Springs†	72	12	46.4	0.60	T.
Cope†	83	21	50.4	1.98	12.0
Crook	92	12	53.1	1.08	T.
Deer Trail*§	75	18	46.8	.....	6.0
Delta†	88	20	52.2	0.20	.....
Denver	.....	.....	.....	.....	3.5
Divide Exper. Station	69	11	41.4	1.51	12.0
Downing†	80	20	52.2	0.65	6.3
Dumont†	72	20	47.0	1.30	T.
Durango†	72	21	47.4	T.	T.
East Dale	.....	.....	.....	T.	.....
First View*¶	84	28	51.3	.....	.....
Fleming	.....	.....	.....	2.00	7.0
Colorado—Cont'd.	°	°	°	*Ins.*	*Ins.*
Fort Collins†	79	17	49.2	1.36	T.
Fox	.....	.....	.....	1.69	1.0
Garnett	.....	.....	.....	0.03	.....
Glen Eyrie†	71	19	48.3	0.49	4.9
Golden *‖	83	28	54.1	1.71	3.3
Gold Hill	75	16	47.8	2.05	18.5
Grand Junction†	79	23	53.6	0.14	.....
Greeley†	.....	23	.....	1.03	T.
Gulch	.....	.....	.....	0.61	3.5
Gunnison†	69	11	38.6	0.10	T.
Holly	.....	.....	.....	0.44	T.
Holyoke *a*	.....	.....	.....	0.76	2.7
Hugo *§	80	25	52.1	.....	.....
Hugo (near) †	79	9°	49.0°	0.85	5.0
Husted †	78	13	46.8	1.14	11.5
Julesburg †	86	13	53.5	0.22	.....
Kit Carson *‖	84	28	47.0	.....	5.0
La Jara †	73	12	46.4	0.30	1.0
Lake Moraine †	56	0	33.9	1.30	17.0
Lamar	.....	.....	.....	0.25	.....
Laporte	.....	.....	.....	1.15	.....
Las Animas †	85	24	51.5	0.07	1.5
Lay *†	73	19	45.0	0.35	2.2
Le Roy †	.....	.....	.....	2.43	6.5
Longmont †	83	17	50.2	1.35	0.5
Loveland	.....	.....	.....	1.37	3.0
Manhattan	.....	.....	.....	1.95	.....
Meeker †	78	16	48.6°	0.98	0.8
Minneapolis †	92	27	56.5	0.77	5.0
Monte Vista	69	15	43.4	T.	
Moraine †	62	7	39.8	1.74	12.0
Ouray †	70	13	44.2	0.84	8.0
Pagodo (near) †	71	13	41.8	1.15	11.5
Paonia †	.....	.....	.....	0.05	0.5
Parachute †	86	22	50.2	0.75	
Pinkhamton	.....	.....	.....	1.59	.....
Pueblo	.....	.....	.....	.....	2.1
Rangely †	81	15	48.2	1.00	
Redcliff	.....	.....	.....	2.10	21.0
Rico	.....	.....	.....	0.33	3.3
River Bend *§	86	30	50.5	.....	10.0
Rocky Ford †	85	19	53.4	0.35	
Ruby †	.....	.....	.....	3.42	34.0
Saguache †	72	10	43.4	0.00	
St. Cloud †	.....	.....	.....	1.79	12.0
San Juan †	71°	9°	38.8°	0.10	1.0
San Luis †	.....	.....	.....	0.00	
Santa Clara *†	84	22	44.8	1.80	18.0
Seibert †	.....	.....	.....	1.62	17.0
Smoky Hill Mine †	76	14	44.8	2.11	10.0
Springfield †	.....	.....	.....	1.05	2.2
Stamford *‖	93	9	36.0	1.40	5.0
Steamboat Springs	71	6	36.6	0.80	7.0
Sterling	.....	.....	.....	0.28	.....
Sulphur Springs †	71	10	39.5	0.51	2.5
Surface Creek †	74	17	47.8	T.	T.
Thon †	83	12	48.7	0.56	2.0
T. S. Ranch †	79	23	51.6	0.20	
Twin Lakes	.....	.....	.....	0.33	3.3
Vernon †	88	18	54.4	2.10	.....
Vilas	.....	.....	.....	1.05	2.0
Wallet	.....	.....	.....	2.10	T.
Watkins *‖	70	25	41.5	.....	.....
Yuma	.....	.....	.....	1.10	6.0
Connecticut.					
Bridgeport *‖	74	30	46.0	3.32	
Canton	84	18	45.2	3.50	T.
Colchester	78	25	46.1	6.86	1.0
Falls Village	.....	.....	.....	4.15	1.5
Greenfield Hill	.....	.....	.....	2.60	0.5
Hartford *b*	.....	.....	.....	4.18	1.0
Hartford *c*	78	28	47.1	.....	.....
Lake Konomoc	.....	.....	.....	4.84	.....
Middletown	81	26	47.8	4.14	1.0
New Haven	.....	.....	.....	.....	T.
New London	.....	.....	.....	.....	T.
North Grosvenor Dale	78	21	44.0	4.66	2.5
Norwalk	81	23	44.8	2.93	.....
Southington *‖	77	26	46.7	3.70	0.5
South Manchester	.....	.....	.....	3.51	.....
Storrs	80	21	44.4	4.27	1.0
Thompson *‖	78	23	43.7	.....	.....
Voluntown †	77	22	45.6	4.96	.....
Wallingford †	.....	.....	.....	4.07	.....
Waterbury	79	26	47.1	3.85	.....
West Simsbury	.....	.....	.....	3.57	1.0
Windsor	77	26	46.0	2.95	1.1
Delaware.					
Dover †	85	32	52.7	5.40	
Kirkwood ‖	.....	.....	48.3	.....	
Milford	85	30	53.8	5.38	
Millsboro	86	28	52.9	5.71	T.
Newark	84	30	49.7	4.80	
Seaford †	84	28	53.5	6.17	T.
Wilmington †	89	31	54.0	4.89	T.
District of Columbia.	°	°	°	*Ins.*	*Ins.*
Dist'ing Reservoir *§	80	36	54.6	5.19	
Receiving Reservoir *§	82	35	53.8	5.32	
West Washington	92	30	55.8	6.09	
Florida.					
Amelia †	83	43	64.9	4.73	
Archer †	87	40	68.0	2.96	
Avon Park †	89	50	70.4	4.98	
Brooksville †	86	46	68.9	6.14	
Clermont †	90	51	70.4	5.14	
De Land †	86	40	67.2	.....	
Earnestville	92	44	69.9	6.32	
Eustis †	89	43	68.4	3.41	
Federal Point †	85	41	66.8	3.44	
Fort Meade †	86	45	67.6	7.64	
Grasmere †	85	45	68.4	6.39	
Green Cove Springs †	84	40	64.2	5.22	
Homeland †	88	43	66.0	6.12	
Hypoluxo *†	86	54	69.6	5.58	
Kissimmee †	88	49	73.2	7.82	
Lake City †	83	45	68.6	4.27	
Manatee †	86	44	67.2	5.02	
Mullet Key †	81	54	69.0	5.70	
Myers †	85	52	70.6	4.52	
New Smyrna †	87	41	66.4	4.45	
Oak Hill *‖	83	57	70.1	.....	
Ocala *†	85	42	67.1	3.73	
Orange City †	89	42	69.7	2.89	
Orange Park	86	40	66.2	5.47	
Orlando †	89	45	69.6	5.15	
Oxford *‖	86	43	68.0	3.43	
Plant City †	91	45	69.6	5.05	
St. Francis Barracks	84	44	66.4	3.95	
Tallahassee †	84	41	65.8	3.35	
Tarpon Springs †	90	47	68.5	5.50	
Georgia.					
Adairsville †	81	30	60.4	4.67	
Alapaha †	86°	40	65.1°	5.85	
Albany †	84	39	65.4	4.16	
Americus †	88	32	64.9	5.05	
Athens *a*	81	35	59.4	6.52	
Athens *b* †	84	32	60.4	6.07	
Bainbridge *b* †	.....	.....	.....	4.90	
Blakely *†¶	83	41	64.7	3.95	
Brag †	88	38	64.5	7.46	
Brunswick †	88	43	66.4	4.54	
Canton †	.....	.....	.....	5.54	
Clayton †	81	24	55.6	10.40	
Columbus †	86	38	64.0	5.14	
Covington	82	30	59.8	5.87	
Dahlonega †	84	31	58.5	6.02	
Darien †	87	50	68.6	2.79	
Diamond †	82	27	56.7	5.61	
Dublin *b*	.....	.....	.....	3.71	
Elberton †	88	35	60.8	4.82	
Fleming †	85	36	63.1	7.00	
Forsyth *‖	85	44	64.8	5.81	
Gillsville	82	32	58.9	6.58	
Griffin *	78	43	62.2	2.80	
Hawkinsville †	79	45	64.9	2.86	
Hephzibah *†¶	82	42	61.9	5.65	
Leverett	85	31	59.0	4.63	
Louisville †	85	34	62.0	3.90	
Macon *b*	85°	34°	62.6°	4.92	
Marietta †	84	32	59.2	4.75	
Marshallville †	85	40	65.3	5.70	
Millen †	88	38	64.9	2.49	
Monticello *†‖	82	40	62.6	3.60	
Morgan	89	38	65.7	2.91	
Piscola	84	43	66.6	5.30	
Point Peter *‖	88	32	60.1	5.30	
Poulan †	84	36	63.4	2.80	
Quitman	82	37	64.4	5.62	
Ramsey †	81	29	59.6	4.00	
Resaca †	.....	.....	.....	4.45	
Reynolds †	.....	.....	.....	4.40	
Rome †	81	33	60.2	7.17	
Talbotton †	84	33	62.6	4.79	
Thomasville †	84	40	65.7	4.32	
Toccoa †	82	31	59.3	8.44	
Washington †	.....	.....	.....	6.36	
West Point	86	35	62.2	5.09	
Whitesburg †	.....	.....	.....	6.88	
Idaho.					
American Falls †	76	20	47.3	0.45	.....
Atlanta †	70	6	40.1	0.28	2.0
Bliss †	84	19	50.9	0.01	
Boise Barracks †	85	17	52.2	0.59	0.5
Challis	79	13	45.1	0.40	
Chesterfield †	79	7	42.0	0.49	T.
Corral	.....	.....	.....	0.00	
Fort Lemhi	81	13	47.8	0.62	3.1
Fort Sherman †	79	22	47.4	1.06	0.6
Fraser †	77	22	47.4	1.36	4.9
Gibbonsville †	78	11	45.6	0.44	
Grangeville	74	22	47.0	3.13	3.1
Hailey †	86	6	45.4	0.29	
Idaho City †	80	14	46.0	0.31	T.

TABLE II.—*Meteorological record of voluntary and other cooperating observers*—Continued.

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Idaho—Cont'd.	°	°	°	*Ins.*	*Ins.*
Idaho Falls	.....	.....	.....	.....	0.6
Kootenai†	79	26	47.2	0.75	
Lake†	60	18	36.5	0.00	
Lewison†	90	25	55.0	1.07	
Martin†	73	10	41.8	0.66	
Moscow†	76	26	48.7	1.30	1.6
Murray †*	77	17	45.6	1.11	2.0
Nampa	85	11	51.0	1.06	
Oakley†	82	20	50.4	0.38	
Paris†	79	13	44.6	0.85	
Payette†	95	16	53.4	0.78	
Salubria†	91	20	52.0	0.86	
Soldier†	75	8	41.2	0.03	T.
Swan Valley†	79	14	44.2	0.37	0.5
Three Creek†	82	4	44.4	0.63	6.8
Warren†	78	0	41.0	2.00	.....
Illinois.					
Albion†	88	31	58.8	2.09	
Ashton *2	.....	28	46.9	0.42	T.
Atlanta	.....	.....	.....	1.58	.....
Atwood *†3	90	26	48.6	3.53	1.0
Aurora†	86	26	50.0	1.48	
Beardstown†	.....	.....	.....	2.90	
Bloomington†	91	23	54.8	2.55	7.8
Braidwood†	88	26	51.8	1.92	2.8
Bushnell†	89	25	55.0	3.54	3.0
Cambridge	.....	.....	.....	1.08	.....
Carlinville†	89	32	56.6	2.08	T.
Carlyle	.....	.....	.....	2.06	.....
Carrollton	85	32	55.4	2.61	
Chemung *1	83	28	49.5	2.52	
Chester†	.....	.....	.....	2.23	
Clear Creek†	89	22	55.4	1.56	
Cordova†	.....	.....	.....	0.39	
Decatur†	98	29	56.0	2.75	1.0
Dixon†	88	29	51.8	1.17	
Duquoin	.....	.....	.....	1.99	
East Peoria†	87	27	53.6	2.45	
Effingham†	88	32	60.1	2.95	
Evanston *10	84	30	44.0	.....	
Fort Sheridan†	81	26	45.5	2.50	.....
Frederick	.....	.....	.....	2.65	
Galva†	90	27	52.8	1.03	
Gilman†	90	25	56.2	3.08	
Golconda†	84	36	61.4	2.71	
Grafton†	.....	.....	.....	1.30	
Greenville†	92	31	57.8	3.19	
Griggsville†	83	33	55.8	2.35	T.
Halliday *5	87[4]	39[4]	62.6[4]	2.13	
Havana†	86	30	56.6	2.68	2.0
Herrins Prairie *1	80	40	60.3	1.80	
Jordans Grove†	88	34	54.0	1.06	
Kankakee†	77	27	50.0	2.81	
Lagrange†	82	25	49.0	1.17	
Lexington *†1	86	26	52.4	3.42	9.5
Loami	.....	.....	.....	2.85	.....
Louisville†	87	33	56.4	1.84	
McLeansboro *†3	.....	38	55.8	2.22	T.
Martinsville†	88	27	55.4	3.43	
Mascoutah *5	94	32	54.8	1.60	
Mattoon *1	90	26	58.0	2.36	T.
Monmouth†	91	26	53.1	2.54	1.0
Mount Carmel†	.....	.....	.....	3.14	
Mount Pulaski	90	29	54.2	1.60	1.0
New Burnside†	91*	33*	58.8*	2.20	
Olney *1	87	34	58.1	2.15	T.
Olney *1	90	28	53.4	4.34	T.
Oswego *1	80	28	48.0	1.56	
Ottawa†	92	22	51.6	2.02	0.8
Palestine	86[f]	34[f]	55.6[f]	3.65	
Paris†	90	25	55.4	3.87	0.5
Peoria *†	.....	.....	.....	2.58	2.0
Peoria *†	86	27	55.7	2.89	2.0
Philo†	87	26	52.8	2.38	
Rantoul *†5	86	29	54.3	2.55	0.2
Riley†	82	27	48.6	1.81	
Rockford *†1	88	28	51.6	1.51	.....
Rushville	91	30	56.2	2.88	2.0
St. John *†3	86	38	60.5	2.12	T.
Springfield	.....	.....	.....	.....	0.7
South Chicago *10	81	28	49.6	.....	.....
Streator†	90	28	53.4	0.41	.....
Sycamore *†1	83	29	48.9	1.24	
Tuscola *†1	84	32	54.2	2.19	
Walnut†	94	28	56.4	1.02	
Warsaw	.....	.....	.....	1.63	
Winnebago†	85	28	56.1	0.70	
Zion†	88	30	51.0	0.18	
Indiana.					
Angola *1	82	25	51.8	1.09	2.0
Ashboro†	87	26	55.4	3.59	
Bedford	85	29	56.1	3.05	
Butlerville†	86	28	55.7	1.70	
Cambridge City†	82	26	51.9	1.61	T.
Cannelton†	90	30	61.6	2.70	
Columbia City *1	85	26	52.4	1.03	2.0
Columbus†	85	29	55.8	1.60	
Connersville†	82	27	52.1	1.79	
Degonia Springs *6	85	32	58.1	2.76	
Delphi	90	26	54.8	1.97	0.2
Edwardsville *†1	84	34	59.6	3.53	
Evansville†	96	31	58.3	2.25	
Farmland†	81	26	52.9	1.23	
Franklin *1	86	33	54.7	1.76	
Hammond†	86	28	50.3	0.51	T.
Huntingburg†	90	29	57.0	2.67	
Huntington†	84	28	52.5	0.85	1.0
Indianapolis	.....	.....	.....	.....	0.2
Jasper†	88	29	58.0	3.49	
Jeffersonville	85	34	57.4	2.75	
Kokomo† [4]	84	29	52.3	1.88	
Laconia	85	29	57.1	3.55	
Lafayette†	88	25	54.1	2.21	0.7
Logansport *a†	.....	.....	.....	2.07	0.5
Logansport *b†	85	30	54.9	1.54	1.0
Lyford	.....	.....	.....	4.28	.....
Madison†	86	32	56.6	2.52	
Marengo *1	86	31	57.4	4.65	T.
Marion†	84	26	52.3	1.71	0.5
Mauzy†	83	25	52.3	1.23	T.
Mount Vernon†	87	35	58.4	2.10	
Plymouth†	.....	.....	.....	2.30	6.8
Princeton *†1	88	30	56.3	2.25	
Rensselaer	.....	.....	.....	2.90	3.0
Rockville†	87	25	54.9	3.52	
Rushville†	.....	.....	.....	1.61	T.
Scottsburg *1	88	34	54.0	2.30	
Seymour†	84	34	54.8	1.77	
Shelbyville†	85*	29*	55.0*	1.72	.....
South Bend†	86	25	51.3	1.06	T.
Sunman *6	83	26	54.5	2.37	T.
Terre Haute†	89	30	57.2	4.37	T.
Topeka†	84	23	50.9	1.37	3.0
Valparaiso†	84	29	50.9	1.95	T.
Vevay	85	30	58.0	0.99	
Vincennes†	89	28	58.7	3.63	
Worthington†	86	28	54.1	3.60	T.
Indian Territory.					
Eufaula†	.....	.....	.....	0.90	
Healdton†	90	33	67.4	2.73	
Kemp†	90	34	65.8	1.67	
Lehigh†	89	32	65.6	2.05	
Pursell†	92	37	65.8	0.85	
Tahlequah†	88	30	61.8	1.31	
Tulsa†	.....	.....	.....	3.05	
Wagoner	89	34	63.4	2.04	
Iowa.					
Afton	85	27	54.9	4.63	
Algona *1	84	30	54.7	2.31	3.5
Alta†	85	26	53.5	3.56	7.0
Amana†	90	16	53.1	1.17	.....
Ames *b*	85	10	53.8	4.08	3.5
Ames *c*	.....	.....	.....	3.44	
Atlantic†	84	17	53.2	5.16	0.5
Atlantic (near)	83	21	55.2	4.01	T.
Audubon	83	26	54.4	4.69	
Belknap (near)	87*	24	55.9*	2.60	1.0
Belle Plaine	89	19	53.2	1.44	2.0
Bonaparte†	91	29	53.7	2.30	
Carroll	84	30	53.2	3.75	3.5
Cedar Falls†	92	26	54.2	2.30	
Cedar Rapids†	86	29	53.8	1.26	0.4
Centerville†	83	36	58.9	4.80	
Chariton	84	28	54.9	2.95	0.2
Charles City†	90	26	53.1	0.91	1.0
Clarinda†	80	25	53.9	2.54	0.5
Clinton	90	28	53.4	0.28	
College Springs	85	14	55.4	2.74	1.0
Corning†	83	25	55.4	3.59	0.5
Cresco†	85	26	51.0	1.69	
Decorah†	88	23	51.8	1.16	
Delaware *2	87	22	51.3	0.95	
Denison†	85	23	55.5	4.76	
Des Moines	.....	.....	.....	.....	0.2
Eldora	85*	15*	52.3*	2.95	10.0
Elkader†	92	25	52.3	0.80	T.
Emmetsburg	85	26	52.8	2.68	T.
Estherville	84	28	55.6	2.54	T.
Fairfield†	86	23	52.3	2.38	0.5
Fayette*	88	22	51.5	1.64	1.2
Forest City	87	28	52.6	2.28	.....
Fort Madison *†1	93	32	57.9	3.22	
Galva†	86	26	53.0	3.46	0.2
Garden Grove	83	28	54.6	3.29	.....
Glenwood†	98	24	58.9	2.93	
Grand Meadow *1	88	30	59.4	0.78	0.2
Grinnell†	86	28	55.1	1.73	.....
Grundy Center	89	12	53.2	2.67	9.0
Guthrie Center	85	30	54.0	5.88	1.5
Hampton	85	23	51.8	2.56	2.0
Hawkeye	.....	.....	.....	0.84	.....
Hopeville†	83	27	55.2	3.64	
Humboldt†	85	8	54.1	2.72	5.0
Independence†	89	9	51.9	1.00	5.0
Indianola†	86	26	55.0	2.35	T.
Iowa City†	90	24	54.1	1.66	T.
Iowa Falls†	87	18	51.8	2.78	5.0
Keokuk	.....	.....	.....	.....	T.
Keosauqua†	88	28	54.3	2.28	T.
Knoxville	88	27	54.2	2.28	0.5
Larrabee†	85	19	54.5	3.73	5.5
Le Claire	.....	.....	.....	0.40	
Logan†	89	30	55.4	3.70	.....
Madrid	88	15	53.7	3.18	
Maple Valley	.....	.....	.....	3.80	.....
Marshall†	89	15	52.8	1.68	.....
Mason City†	86	19	50.8	1.61	
Maxon *1	89	30	55.7	3.77	.....
Mechanicsville	92	25	52.2	0.48	0.1
Monticello *†1	90	30	53.4	0.50	1.0
Mooar	88	30	54.1	3.21	.....
Mount Ayr†	87	27	55.4	2.28	.....
Mount Pleasant *1	83	32	55.9	1.90	.....
Mount Vernon *1	89	26	54.3	.....	.....
Neola	92	18	58.2	4.02	
Newton†	89	19	53.9	2.73	0.5
North McGregor	.....	.....	.....	0.64	
Ogden	86	10	53.5	4.13	5.0
Osage *†5	88	30	50.0	1.11	
Osceola	83	28	53.7	2.74	1.0
Oskaloosa†	90	23	54.2	1.65	0.5
Ottumwa	89	25	55.0	3.05	1.0
Ovid†	86	26	54.3	3.44	T.
Panama†	86	25	55.5	3.22	T.
Primghar	88	28	55.9	2.99	3.0
Rock Rapids	86	30	54.8	3.29	
Sac City†	92	21	53.0	5.05	6.0
Seymour†	88	25	55.5	4.30	T.
Sibley	85	27	54.0	2.81	.....
Sidney	85	20	57.9	3.45	.....
Sioux City	.....	.....	.....	.....	4.5
Spencer	84	28	56.8	2.39	.....
Spirit Lake†	89	29	55.2	2.50	.....
Sutherland	86	23	53.8	2.80	4.5
Toledo *1	84	16	55.2	1.85	1.0
Villisca†	85	24	55.0	3.74	0.3
Vinton *1	88	11	52.8	1.68	.....
Washington†	89	26	53.3	1.20	0.5
Waterloo	88	13	52.8	2.07	5.0
Waukee	84	25	56.4	3.91	T.
West Bend *1	83	27	52.4	2.46	.....
Williams	86	23	53.2	3.00	4.5
Wilton Junction†	90	27	53.2	0.69	.....
Winterset†	87	25	55.1	3.20	.....
Kansas.					
Abilene†	94	32	60.2	2.78	.....
Achilles *5	96	28	52.4	1.00	1.0
Altoona *†3	90	35	58.2	1.03	
Atchison†	87	30	58.2	2.48	T.
Beloit†	90	30	62.4	0.65	.....
Blaine *1	87	25	54.7	1.77	0.2
Burlington†	93	30	59.3	1.94	.....
Colby†	89	21	54.2	1.13	T.
Coldwater†	93	30	60.5	0.65	T.
Collyer *5	92	30	60.2	3.40	4.0
Columbus†	91	30	58.7	0.50	
Coolidge†	92	10	54.3	0.40	
Cunningham†	94	29	60.1	0.60	T.
Dodge City	.....	.....	.....	.....	6.9
Downs	.....	.....	.....	0.48	
Dresden *†1	94	32	55.5	2.32	3.0
Elk City *1	89	35	60.6	1.02	
Ellinwood *5	92	29	54.4	0.50	
Emporia†	88	34	59.9	0.15	
Englewood†	93	31	59.3	0.20	0.5
Eureka Ranch†	92	26	56.6	2.48	6.0
Fort Riley†	87	31	60.0	1.41	T.
Fort Scott	.....	.....	.....	1.14	.....
Frankfort†	92	26	61.6	1.94	
Garden City†	93	19	56.2	0.50	3.0
Garfield	.....	.....	.....	0.92	1.5
Gibson *1	88	27	53.9	2.29	3.0
Girard *1	93	35	60.2	1.09	.....
Gove *†1	90	29	55.2	2.05	5.0
Grainfield *6	92	28	54.1	5.15	1.5
Grenola *1	90	36	58.9	1.15	.....
Grinnell *5	96	32	62.1	.....	4.0
Halstead	88*	28*	57.8	1.05	.....
Haviland	91	29	58.8	0.73	T.
Hays	95	18	54.2	1.20	5.5
Horton†	85	32	59.1	2.16	.....
Hutchinson†	92	29	60.3	1.18	T.
Independence	94	34	61.8	1.12	.....
Ionia†	90	25	59.0	1.30	T.
Jaqua†	86	14	55.2	2.21	.....
Johnson†	94	30	55.8	0.25	1.5
Lawrence *1	86	32	60.6	0.74	
Lebo†	94	34	61.3	0.49	
Macksville†	92	28	59.0	0.97	
McPherson†	93	31	59.6	0.47	.....
Manhattan *b*	94	31	60.7	1.46	

TABLE II.—*Meteorological record of voluntary and other cooperating observers*—Continued.

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Kansas—Cont'd.	°	°	°	*Ins.*	*Ins.*
Manhattan *c* *1	95	28	55.3	1.69	.....
Marion	94	29	60.7	2.91	.....
Meade	91	30	61.3	0.44	4.0
Medicine Lodge	.....	.....	.....	1.24	.....
Minneapolis †	92	30	59.6	1.49	T.
Morland †	92	28	57.0	3.11	8.0
Morton †	91	30	57.2	0.55	3.0
Mount Hope *1	93	35	62.9	0.82	.....
Ness City †	86	30	60.0	1.73	7.0
New England Ranch †	89	29	56.8	2.25	3.0
Norton	91[f]	27[e]	55.5[f]	3.18	7.0
Oberlin †	.....	.....	.....	2.68	3.0
Olathe †	89	32	60.2	1.20	.....
Oswego †	95	34	61.2	0.67	.....
Phillipsburg	92	28	58.0	2.42	0.5
Pleasant Dale †	93	27	57.7	1.01	4.0
Quinter *1	90	30	59.9	3.50	.....
Rome *† 1	93	33	61.0	1.51	.....
Salina †	91	30	54.9	1.68	3.0
Sedan †	92	35	63.0	0.75	.....
Sharon Springs *1	94	29	55.8	1.75	.....
Silver Lake	.....	.....	..	1.00	T.
Topeka	.....	.....	.....	.....	T.
Tribune	89[f]	24[f]	57.9[f]	0.49	.....
Ulysses †	93[j]	28[j]	55.3[j]	1.24	2.2
WaKeeney *1	90	30	55.8	3.40	4.0
Wakefield *1	92	33	61.8	2.78	0.5
Wallace *a*	.....	.....	.....	0.86	T.
Wamego *1	89	30	58.8	3.43	.....
Wellington *1	89	36	63.6	1.49	.....
Wichita	.....	.....	.....	.....	T.
Winfield *5	94	30	60.4	0.75	.....
Winona *1	90	18	49.7	1.00	1.0
Yates Center †	91	32	60.4	1.38	.....
Kentucky.					
Alpha *† 1	84	31	59.3	3.85	
Anchorage	84	33	58.4	3.10	
Blandville †	88	29	58.9	3.00	
Bowling Green *a* *1	85	26	55.7	3.07	
Bowling Green *b* †	89	30	59.4	2.82	
Burnside †	.....	.....	.....	4.65	
Caddo †	84	27	56.2	3.20	
Canton *† 1	88	33	59.4	2.76	
Carrollton †	89	29	56.2	1.85	
Catlettsburg *† 5	87	22	53.0	2.45	
Cromwell †	.....	.....	.....	1.94	
Earlington	88	30	56.0	3.78	
Eddyville †	.....	.....	.....	2.41	
Edmonton †	83	27	56.8	3.09	
Elizabethtown †	90	28	58.0	3.64	
Eubank †	87	26	56.0	3.86	
Falmouth †	.....	.....	.....	2.70	
Fords Ferry †	88	34	60.0	3.10	
Frankfort	83	32	57.8	2.45	
Franklin *† 1	90	38	60.1	3.47	
Georgetown	83	30	55.8	.....	
Greendale *1	82	30	55.1	2.51	T.
Greensburg †	82	30	56.2	3.32	
Harrodsburg	87	30	55.3	4.30	
Harrods Creek †	88	33	58.3	2.67	
Henderson †	92	36	60.6	1.67	
Hendricks †	.....	.....	.....	4.50	
Herbert	89	31	57.8	2.79	
Louisa †	85	31	55.0	2.95	
Marrowbone †	84	25	57.1	4.51	T.
Middlesboro	83[e]	34[e]	57.4[e]	3.26	
Mount Sterling †	82	27	55.0	4.14	
Paducah *a* †	.....	.....	.....	3.99	
Paducah *b* †	94	36	61.4	4.07	
Pleasure Ridge Park †	84	31	56.6	3.83	
Princeton †	89	28	57.4	2.98	
Richmond †	85	30	58.6	2.30	
Russellville †	89	29	59.0	3.61	
Sandy Hook	87	29	55.5	3.18	
Shelby City *1	80	32	54.9	3.57	
Shelbyville †	88	28	56.7	2.41	
South Fork † 2	.....	.....	53.7	4.55	
Springfield †	85	30	55.4	4.24	
Williamsburg	.....	.....	.....	3.41	
Louisiana.					
Abbeville	88	43	66.5	1.75	
Alexandria †	87	40	65.4	3.70	
Amite †	90	41	66.4	3.58	
Bastrop †	86	35	64.8	1.34	
Baton Rouge †	90	44	67.2	2.80	
Calhoun †	88	35	64.0	1.86	
Cameron †	84	39	66.2	0.90	
Cheneyville †	88	42	66.8	2.04	
Clinton †	88[e]	42[e]	66.3[e]	3.31	
Coushatta *a* †	.....	.....	.....	3.05	
Coushatta *b* †	86	35	65.2	3.18	
Covington †	89	41	66.4	2.33	
Davis	89[e]	38[e]	64.0[e]	1.05	
Delhi †	.....	.....	.....	2.00	
Donaldsonville †	91	45	67.5	1.57	
Emile †	87	46	66.0	1.22	
Farmerville	87[e]	36[e]	63.6[e]	4.37	

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Louisiana—Cont'd.	°	°	°	*Ins.*	*Ins.*
Franklin †	88	43	67.0	5.72	
Grand Coteau	87	48	67.5	1.42	
Hammond †	90	42	66.6	3.30	
Houma †	92	46	68.4	8.50	
Jeanerette †	88	43	66.8	3.30	
Lafayette †	90	43	68.4	1.49	
Lake Charles †	88	50	68.0	1.35	
Lake Providence †	92	39	67.4	2.78	
Lawrence †	88	48	67.4	4.73	
Liberty Hill	93	32	66.4	2.27	
Melville †	88	45	66.8	6.75	
Monroe †	90	40	67.2	1.65	
Natchitoches †	88	37	65.9	1.99	
New Iberia	84	48	66.0	1.55	
Oberlin	89	40	64.9	3.45	
Opelousas †	89	40	66.0	3.23	
Paincourtville †	89	45	67.0	2.95	
Plain Dealing †	86	35	63.4	0.75	
Rayne †	91	43	67.4	1.21	
Schriever †	93	45	67.5	2.86	
Shell Beach	87	46	68.0	3.50	
Southern University †	85	45	66.2	2.50	
Sugar Ex. Station †	86	46	67.0	2.53	
Sugartown †	85	43	65.2	1.16	
Wallace	86	46	66.6	1.48	
West End	.....	.....	.....	2.08	
Maine.					
Belfast *6	61	22	43.6	4.03	4.0
Calais †	65	18	43.2	4.23	6.0
Cornish *1	75	26	43.0	7.81	1.0
Easton	75	10	39.8	.....	.....
Eastport	.....	.....	.....	.....	3.0
Fairfield	67	18	43.4	3.50	2.5
Farmington †	78	17	43.8	5.67	0.2
Gardiner	72	21	44.5	4.83	.....
Houlton †	67	12	39.9	3.55	5.0
Kineo †	60	12	37.5	2.06	2.0
Lewiston	73	20	43.4	5.64	1.5
Madison *1	72	20	44.6	.....	.....
Mayfield	67	10	40.5	6.21	.....
North Bridgton	74	20	42.8	6.86	0.5
Orono †	69	12	41.2	3.88	0.2
Petit Menan *1	52	28	39.8	.....	.....
Portland	.....	.....	.....	.....	0.1
West Jonesport *1	60	18	38.9	.....	.....
Maryland.					
Annapolis	84	34	53.6	.6.63	.....
Bachmans Valley *1	84	28	49.8	6.45	T.
Bel Alton	89	32	58.2	5.95	
Boettchervilie *1	86	32	52.1	2.40	
Burkittsville	85	32	52.5	3.46	
Charlotte Hall †	87	29	54.2	6.65	
Cherryfields † 2	.....	.....	52.9	4.51	
Chestertown †	81	31	51.9	6.09	
College Park	85	26	51.7	5.84	
Cumberland *a* †	83	32	52.0	1.63	
Cumberland *b*	86	32	56.5	1.65	
Darlington †	85	28	50.4	6.68	
Deer Park	80	30	45.0	3.30	
Denton †	87	28	54.8	4.59	T.
Easton †	84	30	53.7	.....	
Ellicott City	80	35	53.8	7.25	
Fallston *1	82	33	51.0	8.52	
Frederick *a*	85	32	52.4	4.69	
Frederick *b*	84	33	53.1	4.97	
Garrison	85	28	50.8	9.28	T.
Glyndon	84	25	51.6	7.60	
Grantsville	76	22	46.2	4.18	
Great Falls *5	84	33	53.9	5.26	
Hancock	89	25	52.6	1.71	
Jewell †	85	32	53.6	6.25	
Johns Hopkins Hospital	86	33	52.0	.....	
La Plata †	85	30	55.6	6.50	
McDonogh	80	32	51.1	.....	
Mardela Springs †	86	27	53.4	6.35	
Mt. St. Marys College 1	84*	29	52.6	4.09	
Oakland †	76	22	46.0	3.58	T.
Pocomoke City	84	32	55.3	7.44	
Popes Creek	89	29	53.4	5.55	
Princess Anne	83	27	54.1	5.58	T.
Sharpsburg	87	30	52.4	2.96	
Solomons †	77	35	53.9	5.52	
Sunnyside	79	18	47.0	4.69	5.5
Upper Marlboro †	88	30	52.8	5.32	
Western Port	81	27	50.4	1.15	
Westminster	84	30	54.4	5.45	
Woodstock	85	27	51.4	.....	
Massachusetts.					
Adams	76	22	45.5	.....	.....
Amherst	79	19	45.3	4.47	.....
Amherst Ex. Station *a*	80	34	45.0	5.50	0.5
Amherst Ex. Station *b*	81	25	45.6	5.56	0.5
Andover *	80	23	45.8	3.59	.....
Ashland	.....	.....	.....	5.12	.....
Bedford	81	21	45.1	4.10	2.0
Beverly Farms	69	25	42.5	4.41	2.0
Blue Hill (summit)	79	23	44.0	5.24	1.0

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Massachusetts—Cont'd.	°	°	°	*Ins.*	*Ins.*
Blue Hill (valley)	80	21	44.8	4.99	.....
Boston	.....	.....	.....	4.84	.....
Boston (W. B.)	.....	.....	.....	.....	0.5
Brockton *a*	78	26	45.6	4.77	0.5
Brockton *b*	.....	.....	.....	5.40	0.5
Brockton *c*	.....	.....	.....	5.36	.....
Cambridge *a*	81	26	46.4	3.58	.....
Cambridge *b*	77	25	45.4	4.15	.....
Chestnut Hill	82	24	46.1	4.60	2.0
Clinton	.....	.....	.....	3.82	.....
Concord †	81	22	45.0	4.41	1.5
Dudley	81	24	44.5	2.06	0.8
East Templeton *1	76	25	43.7	3.79	2.5
Egg Rock, Nahant	67	28	42.2	.....	.....
Fall River	76	27	45.7	4.69	.....
Fiskdale	.....	.....	.....	3.96	4.0
Fitchburg *a* *1	75	25	43.7	4.73	1.0
Fitchburg *b*	80	23	44.7	4.85	2.0
Framingham	79	22	45.1	5.38	.....
Groton	79	21	44.0	4.60	3.0
Hadley	82	21	44.0	4.60	2.0
Hingham	.....	.....	.....	4.47	0.5
Hobbs Brook	.....	.....	.....	4.40	1.2
Hyannis	71	29	47.6	1.73	.....
Hyde Park *6	.....	28	45.9	.....	.....
Lake Cochituate	82	16	44.8	5.03	.....
Lawrence	76	22	45.3	4.94	3.0
Leeds	81	22	44.5	5.12	.....
Leominster *6	76	24	45.1	4.34	1.5
Long Plain *6	70	24	45.0	4.22	.....
Lowell *a*	78	24	45.1	4.57	.....
Lowell *b*	81	20	44.6	.....	.....
Lowell *c*	82	25	45.0	.....	.....
Ludlow Center	75	20	42.6	6.17	1.0
Lynn *a*	75	24	43.4	3.35	.....
Lynn *b*	79	27	45.0	.....	.....
Mansfield *1	76	22	45.1	6.45	0.5
Middleboro	77	19	44.2	4.95	0.2
Milton	78	26	46.0	4.25	
Monroe	73	15	39.1	5.96	1.0
Monson	82	23	46.9	4.22	2.0
Mount Nonotuck	.....	.....	.....	3.41	1.0
Mystic Lake	.....	.....	.....	4.46	.....
Mystic Station	.....	.....	.....	4.28	.....
Natick *1	76	27	44.9	8.02	1.0
New Bedford *a*	67	28	44.9	4.22	
New Bedford *b*	69	23	44.1	5.81	
North Billerica	82	28	47.8	3.48	2.0
Pittsfield	76	21	42.2	4.17	.....
Plymouth *1	79	32	46.2	4.79	.....
Provincetown	69	26	43.9	3.08	
Roberts Dam	.....	.....	.....	4.63	1.0
Roxbury	80	27	46.0	4.51	1.0
Salem	.....	.....	.....	3.36	2.0
Somerset *1	80	24	47.8	5.37	
Springfield Armory	82	25	46.2	3.93	
Taunton *b*	76	25	46.3	5.47	T.
Taunton *c*	75	20	45.3	5.55	.....
Taunton *d*	78	22	45.2	5.15	T.
Turners Falls	78	25	45.6	2.78	.....
Wakefield †	81	25	45.2	4.03	1.0
Waltham	.....	.....	.....	4.67	.....
Webster	.....	.....	.....	4.68	0.8
Westboro †	81	22	46.2	4.08	2.0
Williamstown	75	23	43.4	3.90	.....
Winchendon	.....	.....	.....	4.34	2.0
Winchester	.....	.....	.....	3.91	.....
Winthrop	80	22	43.4	2.87	1.0
Worcester *a*	78	24	45.2	2.69	.....
Worcester *b*	78	25	45.6	4.27	1.0
Worcester *c* *1	75*	27	43.7*	.....	.....
Michigan.					
Adrian	85	23	49.3	1.31	
Albion	80	25	49.6	0.92	.....
Allegan	84	24	50.2	1.44	
Alma	80	23	46.5	1.92	T.
Alpena	.....	.....	.....	.....	1.8
Ann Arbor	78	24	48.2	0.90	T.
Arbela *2	.....	25	43.8	1.40	
Ball Mountain	78	22	46.2	1.64	
Battle Creek	84	24	50.8	1.67	
Bear Lake *3 4	.....	19	43.8	.....	
Berlin *1	81	21	44.9	1.61	T.
Berrien Springs *1	84	32	51.6	1.10	
Birmingham	80	25	48.1	1.88	
Bois Blanc *10	70	28	43.0	.....	
Boon	80	17	43.7	1.99	0.5
Bronson	88	24	49.8	1.82	
Brown City	79	18	45.8	1.29	
Calumet	71	23	40.7	2.28	T.
Charlevoix	72	21	44.3	0.75	
Cheboygan	73	19	41.3	2.28	1.5
Clinton	84	24	49.2	1.11	T.
Crisps *10	70	17	38.4	.....	
Crystal Falls	79	18	44.2	2.55	0.5
Detroit	.....	.....	.....	.....	0.1
Escanaba †	60	20	41.5	0.57	0.1

TABLE II.—*Meteorological record of voluntary and other cooperating observers*—Continued.

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Michigan—Cont'd.	°	°	°	*Ins.*	*Ins.*
Fairview	80	24	47.4	0.90	0.2
Fitchburg	82	21	47.0	2.04	0.5
Flint	89	22	46.6	1.35	
Gladwin	81	21	43.4	1.90	
Grand Point au Sable *10	68	25	41.0	.....	
Grand Rapids [c]	86	28	52.4	1.27	
Grape	80	22	47.7	1.20	
Grayling	82	18	44.0	0.80	1.0
Grindstone City *9	80	18	40.8	.....	
Hammonds Bay *10	76	22	39.7	.....	
Hanover	79	24	49.4	1.11	
Harbor Springs	76	20	41.7	0..3	
Harrisville	72	17	39.4	2.41	1.5
Hart	76	20	44.7	0.90	
Hastings	80	24	48.6	1.48	T.
Hayes	73	21	43.2	1.25	1.0
Hesperia	85	21	46.2	1.47	
Highland Station	79[f]	24[f]	48.9[f]	1.17	0.2
Holland *10	80	27	48.0	.....	
Howell	83	22	47.4	1.36	0.2
Ivan	83	20	44.2	1.59	T.
Jeddo	79	25	44.2	1.81	
Kalamazoo	81	27	50.6	1.28	
Lansing	79	25	48.7	1.12	0.1
Lathrop *1	74	24	41.0	1.05	T.
Lewiston	79	18	44.5	2.04	.....
Ludington *10	80	30	43.9	.....	
Madison	83	24	49.0	1.11	
Manistee *10	70	28	42.7	.....	
Marquette	.....	.....	.....	.....	0.1
Mayville	80	24	47.2	1.91	T.
Middle Island *10	59	29	39.4	.....	
Montague *10	70	30	44.4	.....	
Mottville	88	22	50.8	1.15	
Muskallongee Lake *10	66	28	37.9	.....	
N. Manitou Island *10	63	28	40.6	.....	
North Marshall	81	20	47.6	1.43	T.
Northport	72	24	43.3	2.95	T.
Old Mission	75	22	44.6	1.47	
Ottawa Point *9	64	22	40.6	.....	
Ovid	81	24	47.2	1.49	
Parkville	.....	.....	.....	1.36	
Pentwater *10	68	28	47.9	.....	
Point aux Barques *10	74	24	39.8	.....	
Point Betsey *10	66	30	45.3	.....	
Pontiac	80	24	47.8	1.16	
Rockland	82[1]	22[1]	44.8[1]	3.40	T.
Romeo	80	22	47.6	0.07	
St. Ignace	61	21	40.4	2.30	1.0
St. Johns	81	23	49.2	1.48	0.5
Sand Beach *a*	74	20	40.0	2.10	.....
Sand Beach *b* [9]	72	25	42.0	.....	
Sault Ste. Marie	.....	.....	.....	.....	2.0
Standish	72	26	46.1	1.61	.....
Stanton	80	23	46.4	1.78	
Sturgeon Point *10	60	13	38.8	.....	
Thornville	79	25	48.1	1.41	0.5
Thunder Bay Island *10	52	25	37.8	.....	
Two Heart River	68	18	36.7	.....	
Vandalia	84	25	52.2	1.23	
Ypsilanti	81	20	46.6	1.22	
Minnesota.					
Ada †	84	20	50.4	1.60	
Albert Lea †	78	24	52.1	2.33	
Alexandria *c* †	.....	.....	.....	2.47	
Beardsley †	81	18	51.8	2.47	
Belleplaine *1	77	33	49.7	1.45	
Bingham Lake †	80	27	54.8	1.83	
Bird Island	79	24	51.6	1.28	
Blooming Prairie †	80	23	51.0	1.10	
Bonniwells Mills †	78	23	50.6	1.27	
Caledonia †	84	24	48.5	1.08	
Cambridge †	75	22	49.0	1.82	
Camden †	82	21	53.4	2.45	
Campbell	84	20	51.4	1.06	
Clear Lake †	78	23	50.1	1.24	
Clear Water *1	75	27	46.8	1.77	
Collegeville	78[h]	26[h]	52.2[h]	1.43	
Crookston †	80	24	49.4	1.19	
Dawson *1 [c]	80	20	49.4	1.12	
Duluth	.....	.....	.....	.....	0.1
Farmington †	78	25	51.0	2.37	
Fergus Falls †	76	25	51.4	2.19	
Fort Ripley †	.....	.....	.....	1.13	
Grand Meadow †	89	23	49.8	1.28	
Grand Portage †	53	19	36.2	.....	
Granite Falls	81	24	53.1	1.74	
Hutchinson †	80	23	51.9	1.30	
Koochiching †	75	13	42.7	3.38	
Lake Winnibigoshish *1	70	25	46.4	0.79	
Lawrence †	74	19	46.2	1.55	
Leech Lake [1]	74*	14	46.2	0.83	
Long Prairie †	77	19	48.8	2.13	
Luverne †	81	27	53.7	2.62	
Maple Plain	78	24	51.6	1.96	
Marfield †	72	10	44.4	2.32	
Mazeppa [1]	76*	26	50.1	1.30	

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Minnesota—Cont'd.	°	°	°	*Ins.*	*Ins.*
Milan †	82	19	52.8	1.37	
Minneapolis *a* †	80	25	52.0	1.59	
Minneapolis *b* [8]	77*	26	50.7	1.72	
Minnesota City †	85	22	52.5	3.85	T.
Montevideo †	83	25	53.2	1.13	
Morris †	81	23	52.6	1.71	
New London	78	22	51.4	1.83	
New Richland *1 [4]	78	30	52.6	.....	
New Ulm †	78	30	55.6	0.97	
Park Rapids †	75	19	47.3	0.47	
Pine River *1	71	20	46.8	0.81	
Pleasant Mounds *† [1]	80	24	51.6	1.99	
Pokegama Falls [1]	79*	15	44.5	1.54	
Red Lake †	75	12	46.3	2.09	
Redwing	.....	.....	.....	1.75	
Redwood Falls †	.....	.....	.....	1.68	
Rolling Green †	81	29	52.4	2.75	
Roseau	74	28	50.2	1.71	
St. Charles †	83	21	50.0	2.52	T.
St. Cloud	71	26	49.1	2.30	
St. Olaf	79	25	51.2	2.19	
St. Peter †	79	25	52.3	1.75	
Sandy Lake Dam [1]	70*	15	45.4	0.20	
Sauk Center	77	22	49.6	2.28	
Shakopee [6]	75*	23	54.5	1.17	
Sunrise City *6	74	22	50.2	.....	
Two Harbors †	66	33	42.8	1.19	0.5
Wabasha *1	81	25	52.0	1.95	
Willmar †	78	34	51.0	1.92	
Winona	83	35	52.4	2.25	T.
Worthington	79	27	53.6	2.39	
Zumbrota *1 [4]	78	30	51.5	.....	
Mississippi.					
Agricultural College	83	39	65.0	2.63	
Batesville †	86	35	63.6	3.26	
Bay St. Louis †	81	47	66.4	4.06	
Biloxi †	80	45	65.7	5.45	
Briers	84	44	65.4	2.31	
Brookhaven †	95	39	67.0	2.92	
Canton †	84	40	65.3	2.66	
Columbus †	.....	.....	.....	4.72	
Corinth †	87	42	61.4	7.50	
Crystal Springs †	90	39	65.1	2.31	
Duck Hill †	85	30	63.2	4.95	
Edwards	91	41	66.4	1.58	
Enterprise	86	36	65.4	2.25	
Fayette †	87	40	65.4	2.51	
French Camps †	86	32	63.8	3.10	
Fulton †	88	32	62.8	4.70	
Greenville *a*	88	42	65.7	1.70	
Greenville *b* †	90	40	65.0	1.71	
Hattiesburg †	90	35	63.2	1.20	
Hazlehurst	90	40	66.3	0.65	
Hernando †	86	40	63.2	2.45	
Holly Springs †	85	36	63.2	3.61	
Itta Bena *1	88	38	63.7	1.68	
Jackson †	90	40	65.4	1.34	
Kosciusko †	87	38	63.7	.....	
Lake	84	31	64.5	1.63	
Leaf *1	84	50	64.9	.....	
Leakesville †	87	39	66.0	7.02	
Logtown †	84	46	67.4	3.25	
Louisville †	87	33	62.4	2.31	
Mayersville	90	41	70.0	4.85	
Moss Point †	84	48	66.5	3.35	
Natchez †	88	40	65.4	1.90	
Palo Alto †	85	39	64.7	4.24	
Pontotoc †	86	35	64.8	2.20	
Port Gibson †	89	39	65.6	2.48	
Rosedale †	.....	35	.....	2.77	
Stonington *3	85	48	67.6	.....	
Thornton †	86	48	67.7	2.47	
Topton *3	84	48	67.7	2.87	
University †	88[1]	39[1]	63.8[1]	3.49	
Vaiden †	94	35	65.2	2.76	
Water Valley *† [1]	90	34	63.1	4.92	
Waynesboro *a* †	95	40	66.2	5.40	
Woodville †	91	42	66.4	2.94	
Yazoo City †	96	37	67.8	1.61	
Missouri.					
Akron	.....	.....	.....	2.72	
Appleton City †	88	35	58.8	2.72	
Arlington †	.....	.....	.....	1.10	
Arthur *† [3]	.....	36	55.5	2.70	
Bagnell †	.....	.....	.....	1.10	
Bethany	88	25	57.0	1.48	
Big Piney	.....	.....	.....	0.80	
Birch Tree	88	32	59.8	2.33	
Bluffton *1	90	32	61.0	0.80	
Boonville †	.....	.....	.....	2.57	
Brunswick	97	30	59.4	0.80	
Carrollton †	88	32	58.6	1.10	
Carthage	.....	.....	.....	0.63	
Conception	88	30	57.8	2.29	T.
Cowgill *5	88	32	60.4	1.18	
Darksville †	100	30	57.6	0.91	
Downing	.....	.....	.....	4.41	0.5

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Missouri—Cont'd.	°	°	°	*Ins.*	*Ins.*
East Lynne *2	.....	30	53.4	4.11	
Edgehill *5	84	36	59.0	2.25	
Eight Mile *1	86	32	56.8	3.62	
Eldon *1	88	36	58.6	1.59	
Elmira	90	27	58.2	1.27	T.
Emma *3	.....	34	59.4	1.22	
Fairport	.....	.....	.....	1.24	
Farmersville	.....	.....	.....	1.46	
Fayette	91	31	59.0	1.23	
Fulton	.....	.....	.....	2.25	
Gallatin *1	87	31	57.6	1.97	0.5
Gayoso *3	.....	32	57.0	2.13	
Glasgow	92	29	57.9	0.83	
Gordonville *3	.....	33	57.4	3.63	
Gorin *2	94	33	54.0	4.11	T.
Grove Dale	.....	.....	.....	2.94	0.6
Half Way	86	31	58.6	2.05	
Harrisonville †	91	33	60.3	2.49	
Hastain	91	31	59.3	1.21	
Hermann †	.....	.....	.....	0.72	.....
Houston	82	30	56.9	2.32	
Houstonia (near)	.....	.....	.....	1.78	
Humansville	89	28	58.4	1.64	
Ironton *† [1]	86	35	57.5	1.82	
Jefferson City †	90	32	61.0	2.22	
Kansas City	.....	.....	.....	.....	0.4
Kidder	88	26	57.5	1.59	2.5
Lamar	87	34	59.4	4.34	
Lamonte	.....	.....	.....	2.27	
Langdon †	86	27	56.4	2.14	T.
Lebanon	87	35	59.4	2.64	
Lexington †	90	30	59.4	1.71	
Liberty	92	33	61.3	0.86	T.
Linn Creek	91	33	61.2	1.00	
Louisiana Bridge †	.....	.....	.....	1.73	
McCune *† [1]	89	35	56.3	1.11	
Marble Hill	.....	.....	.....	3.65	
Marceline	.....	.....	.....	1.29	
Marshall †	97	30	58.2	1.18	
Maryville [4]	83*	28	52.8	2.47	T.
Mexico †	91	30	57.6	1.47	
Miami	90	32	61.0	0.93	
Mine La Motte †	85	29	58.0	1.68	
Mount Vernon	90	28	54.2	1.05	
Neosho	92	32	59.0	2.23	
Nevada	.....	.....	.....	0.98	
New Hartford *4	.....	35	53.7	0.53	
New Haven *1	88	30	57.4	0.56	
New Madrid	91	36	63.2	2.73	
New Palestine	.....	.....	.....	2.31	
Oakfield †	89	33	59.4	0.66	
Oak Ridge *4	92	37	59.6	2.70	
Olden †	88	33	60.6	3.44	
Oregon *a*	85	31	59.8	2.37	0.3
Oregon *b*	87	29	58.5	2.14	T.
Osceola †	.....	.....	.....	1.37	
Oto	.....	.....	.....	1.63	
Palmyra *2	90	30	58.1	3.03	
Panacea	95	35	62.2	1.68	
Phillipsburg	84	35	57.4	2.04	
Pickering *3	.....	28	51.4	1.79	0.2
Pierce City *1	88	32	58.4	0.92	
Platte River *2	88	28	54.9	1.93	1.5
Poplar Bluff	88	33	61.2	2.90	
Potosi	88	24	55.8	1.33	T.
Princeton *1	90	28	53.9	3.01	
St. Charles	88	35	57.0	0.52	
St. Joseph †	.....	.....	.....	2.19	
St. Louis	87	32	57.2	0.83	
St. Louis (W. B.)	.....	.....	.....	.....	T.
Sarcoxie *3	92	36	58.1	1.20	
Shelbina	.....	.....	.....	0.70	
Sikeston	91	30	60.6	2.73	
Steffenville	.....	.....	.....	3.42	T.
Stellada †	89	31	58.8	3.27	
Sublett	87	24	54.0	3.80	
Tindall †	.....	.....	.....	1.51	
Unionville †	95	26	55.4	3.54	
Vermont *† [1]	90	34	55.8	1.11	
Versailles	.....	.....	.....	1.27	
Vilas	.....	.....	.....	2.75	
Virgil City	.....	.....	.....	2.30	
Warrensburg *1	89	35	59.3	2.79	
Warrenton	86	32	58.4	0.30	
Wheatland	.....	.....	.....	1.55	
Willow Springs [1]	87*	31	59.2	2.28	
Montana.					
Billings †	80	35	59.0	2.10	
Boulder †	73	20	44.5	0.38	
Bozeman †	71	15	45.0	1.18	6.0
Butte †	70	17	42.4	0.25	3.0
Choteau †	79	19	48.0	0.24	0.5
Cokedale †	75	17	45.5	1.11	1.5
Columbia Falls †	79	16	45.5	0.41	
Deer Lodge City †	79	7	44.8	0.51	0.2
Dillon †	75	14	44.1	0.67	5.0
Fort Benton †	76	10	46.8	1.60	.....

TABLE II.—*Meteorological record of voluntary and other cooperating observers*—Continued.

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean	Precipitation. Rain and melted snow.	Total depth of snow.
Montana—Cont'd.	°	°	°	*Ins.*	*Ins.*
Fort Custer†	80	25	49.6	0.54	0.2
Fort Keogh†	79	20	48.5	1.62	
Fort Logan†	78	7	40.4	1.99	19.4
Fort Missoula	78	20	44.2	0.35	
Glasgow†	77	20	50.0	0.42	2.0
Glendive†	83	24	51.4	1.04	1.0
Great Falls†	79	22	49.4	1.00	.....
Havre	.....	.....	.....	.....	0.1
Helena	.....	.....	.....	.....	3.6
Hogan†	73	22	47.0	0.25	
Kipp†	.....	.....	.....	0.91	0.5
Martinsdale†	84	17	47.2	0.76	.....
Marysville† [6]	72	18	44.0	0.36	2.0
Miles City	.....	.....	.....	.....	T.
Musselshell	86	14	46.8	T.	
Pony†	68	30	47.3	0.90	.....
Radersburg†	.....	.....	.....	0.24	2.0
Sun River†	76	17	45.4	0.90	T.
Troy†	80	19	47.5	1.31	
Utica†	75	19	48.4	0.75	
Virginia City†	71	12	43.8	0.94	7.0
White Sulphur Springs†	71	11	42.6	0.96	5.0
Wibaux†	82	22	52.2	0.94	2.0
Yale	79	16	44.4	1.51	.....
Nebraska.					
Agee *1	90	32	54.8	3.25	T.
Albion†	86	26	55.0	2.08	
Alma	.....	.....	.....	2.30	
Ansley†	92	23	55.2	2.76	
Arborville *1	88	24	55.7	1.30	
Ashland *a*†	88	26	57.6	2.31	T.
Ashland *b* *1	90	30	59.4	2.52	T.
Ashton	.....	.....	.....	1.86	
Auburn *† 1	90	30	58.6	3.25	
Aurora *1	84	22	58.0	2.08	T.
Bancroft	.....	.....	.....	2.32	
Beatrice†	87	24	56.1	1.55	
Beaver City	87	24	57.0	2.18	T.
Benkelman *1	92	32	50.9	1.53	3.5
Blue Hill *1	85	30	57.4	2.00	
Bratton *1	84	32	57.8	3.11	T.
Brokenbow *1	85	25	53.8	.....	.....
Burchard *1	85	25	58.1	1.80	T.
Burwell *1	88	30	59.2	1.82	
Callaway†	84	26	53.6	3.15	
Central City *5	88	32	59.8	2.04	
Chester *1	86	28	61.0	1.11	
Columbus†	84	31	56.9	3.82	
Cornlea	.....	.....	.....	2.85	
Cortland *1	84	29	56.6	2.79	
Crete	85	28	56.9	1.54	
Culbertson	.....	.....	.....	1.56	T.
Curtis *a*† *5	92	30	56.0	2.08	
David City *† 1	89	31	57.0	2.35	1.0
Divide *	90	34	59.8	2.31	
Dunning *1	82	20	53.7	3.32	1.0
Edgar *1	90	24	60.0	2.00	
Elba	.....	.....	.....	1.51	
Elwood	.....	.....	.....	2.37	
Ericson *† 1	92	23	56.1	2.05	
Ewing†	.....	.....	.....	3.43	T.
Fairmont *1	85	30	58.1	1.71	
Fontanelle	88	25	56.7	5.18	0.5
Fort Robinson	83	21	51.9	0.82	6.0
Franklin†	88	29 [f]	57.8 [e]	3.02	
Geneva†	89	26	57.8	2.59	T.
Genoa†	85	32	57.0	2.58	0.5
Gering†	81	17	52.2	0.43	0.2
Gibbon	86	27	57.9	1.90	
Glenwood *3	.....	28	50.0	2.92	
Gothenburg	93	24	57.8	1.61	
Grand Island *1	92	31	59.0	2.16	
Greeley Center *1	86	28	57.9	3.01	
Hartington†	85	28	54.4	3.99	7.0
Harvard *1	87	28	57.2	2.43	T.
Hastings *1	84	30	52.6	2.20	
Hayes Center	.....	.....	.....	1.60	5.5
Hay Springs†	85	16	50.0	4.33	2.0
Hebron†	89	26	58.4	2.03	.....
Hickman *1	90	30	57.2	3.82	
Holdredge *a* *3	.....	28 [e]	53.3 [e]	2.15	T.
Holdredge *b* *1	98	26	54.9	2.33	
Imperial *a*†	89	15	54.5	0.84	3.0
Indianola *5	86	20	56.2	0.97	
Kearney *1	88	28	60.0	2.00	
Kennedy 1	88	19 [e]	53.4	3.40	
Kimball†	81	17	50.1	0.30	3.0
Lexington†	91	30	52.8	1.53	
Lodge Pole†	86	12	51.4	1.46	1.5
Lynch *† 1	88	30	56.6	3.65	3.0
McCook *1	85	18	55.4	1.25	T.
Madison *1	86	29	57.0	4.50	
Madrid *† 5	85	15	52.7	0.78	4.0
Marquette *	86	29	.....	2.35	T.
Mason City	.....	.....	.....	2.68	
Minden *1	87	23	55.6	2.70	1.2
Nebraska City *a* *† 1	80	29	54.6	4.45	.....
Nebraska—Cont'd.					
Nebraska City *b* *1	86	34	56.4	4.46	0.2
Nemaha *1	89	28	57.0	3.61	.....
Norfolk	81	30	55.8	3.80	.....
North Loup †	87	26	54.2	3.44	.....
North Platte	.....	.....	.....	.....	2.7
Oakdale†	85	28	55.5	3.81	0.9
Odell *5	88	26	59.5	0.87	
Omaha (W. B.)	.....	.....	.....	.....	0.4
O'Neill *1	86	30	55.8	6.72	3.0
Ough†	.....	.....	.....	0.84	4.5
Palmer *a* *1	90	30	55.0	2.25	
Palmer *b*	.....	.....	.....	2.00	
Plattsmouth *a*†	.....	.....	.....	3.44	T.
Plattsmouth *b* *1	92	32	61.4	3.27	
Ravenna *a*	86	27	56.4	2.28	T.
Ravenna *b* *1	84	28	55.5	1.82	
Red Cloud *a*	.....	.....	.....	0.83	
Red Cloud *b* *1	88	30	58.3	1.48	
Republican *1	91	27	60.9	1.65	
Rulo *1	86	34	58.6	2.09	
Salem *1	84	32	57.5	6.00	
Santee Agency†	87	31	58.2	3.10	2.0
Schuyler	.....	.....	.....	4.40	
Seneca *1	82	12	48.1	1.30	3.0
Seward *5	89	25	62.0	1.29	
Spencer (near) 1	.....	.....	.....	3.63	
Springview	88	22	55.4	3.36	5.0
Stanton *1	87	31	55.4	3.08	
State Farm	88	29	58.2	2.59	
Strang *1	88	32	62.8	2.77	
Superior *5	84	30	58.7	2.54	
Sutton	85	24	54.6	2.88	T.
Syracuse	.....	.....	.....	3.22	
Tecumseh†	85	29	55.5	4.87	
Tekamah	89	26	57.1	3.50	1.0
Turlington†	87	28	56.4	2.56	0.5
Wakefield	.....	.....	.....	3.35	2.5
Weeping Water *1	86	26	54.3	3.34	T.
Weston *5	98	32	51.8	1.22	
Westpoint	93	28	57.8	2.60	T.
Whitman	.....	.....	.....	0.69	2.0
Wilber *1	96	32	59.5	1.38	
Wilcox	.....	.....	.....	2.21	T.
Wilsonville *1	86	30	54.5	3.88	T.
York *1	90	30	57.7	1.50	
Nevada.					
Austin	70	13	45.4	0.61	5.0
Battle Mountain *1	77	25	54.9	0.30	
Belmont	70	14	43.1	0.47	4.5
Beowawe *5	80	18	50.5	0.05	0.5
Candelaria	77	21	52.9	0.76	
Carlin *3	75	20	44.7	.....	.....
Carson City	76	15	47.4	0.40	T.
Carson City (W. B.)	.....	.....	.....	.....	T.
Clover Valley†	.....	.....	.....	0.12	
Cortez†	.....	.....	.....	0.20	
Cranes Ranch	.....	.....	.....	0.50	
Downeyville	88	21	56.1	0.70	
Edgewood	69	12	40.4	1.00	10.0
Elko *3	75	20	47.0	0.10	
Elko (near)	76	8	41.8	0.10	
Ely	73	12	42.7	1.85	T.
Empire Ranch†	86	17	50.0	0.09	3.0
Fenelon *3	76	14	47.9	0.21	
Genoa	65	28	46.2	0.25	
Golconda *1	82	26	50.0	0.00	
Gold Hill	79	15	49.2	0.18	T.
Halleck *1	88	22	43.3	0.31	
Hamilton	79	3	43.0	0.43	3.2
Hawthorne *a* *3	73	29	51.5	0.15	
Hawthorne *b*	80	20	50.3	0.15	
Hot Springs *1	82	32	59.5	0.00	
Humboldt *3	81	27	57.1	0.55	
Lewers Ranch	77	16	48.2	0.98	2.5
Lovelock *1	86	40	60.8	0.13	
Marlette Lake†	.....	.....	.....	0.95	8.5
Mill City *1	72	28	46.2	.....	.....
Osceola†	74	13	48.3	0.56	2.5
Palisade *1	82	16	46.8	0.18	
Palmetto	74	18	45.0	0.75	5.0
Paradise Valley	85	15	49.0	0.70	T.
Reno *3	74	32	48.0	0.23	
Reno State University	75	18	47.6	0.39	
Ruby Valley†	.....	.....	.....	0.12	T.
St. Clair	81	19	50.8	0.10	
St. Thomas	95	38	66.0	T.	
Stofiel	75	1	38.4	0.62	4.5
Sunnyside	80	10	45.6	0.45	
Tecoma *3	75	28	50.0	.....	.....
Toano *1	78	21	47.0	.....	.....
Tybo	77	11	46.9	T.	T.
Verdi *3	72	30	48.5	1.06	1.0
Wadsworth *3	84	20	47.0	0.20	
Wells *3	78	15	42.6	0.14	0.5
Winnemucca	.....	.....	.....	.....	1.9
Yerington	78	17	50.1	0.25	
New Hampshire.					
Alstead *6	71	19	42.6	4.84	
Belmont	.....	.....	.....	5.41	.....
Berlin Mills	71	9	39.8	5.93	2.0
Bethlehem	70	12	40.4	2.90	2.0
Brookline *1	83	22	45.1	5.38	1.0
Concord	79	22	44.5	4.52	3.0
Grafton	77	16	42.7	5.71	T.
Hanover	74	18	42.0	4.26	1.1
Keene	78	18	43.3	4.51	0.5
Lakeport	.....	.....	.....	5.25	.....
Lancaster	70	16	43.2	4.02	.....
Mine Falls	.....	.....	.....	4.44	
Nashua	80	22	45.2	3.88	2.0
Newton	76	23	43.4	3.60	2.0
North Conway	77	10	42.2	10.08	1.0
Pennichuck Station	.....	.....	.....	4.05	
Peterboro	77	17	41.8	4.40	4.5
Plymouth	74	17	41.1	7.21	1.0
Sanbornton†	75	18	41.9	5.34	1.5
Stratford	76	14	43.7	4.31	.....
Sugar Hill	65	15	40.9	.....	.....
Weirs Bridge	.....	.....	.....	5.36	.....
West Milan	72	8	38.8	3.87	3.7
Wolfboro	.....	.....	.....	5.59	.....
New Jersey.					
Allaire	87	20	47.8	.....	
Asbury Park	85	27	47.6	6.63	T.
Barnegat	79	25	49.2	4.92	
Bayonne	85	28	48.9	3.93	T.
Beach Haven	68	32	47.4	4.93	
Belvidere	85	19	49.1	4.28	
Beverly†	89	26	51.6	4.84	T.
Billingsport	82	33	50.4	6.65	
Blairstown	87 [e]	30 [e]	53.3 [e]	2.63	
Boonton	85	26	48.9	5.43	T.
Bridgeton	85	33	53.3	6.25	
Camden	86	29	51.5	5.08	
Cape May	73	31	49.4	3.68	
Cape May C. H.†	74	29	49.4	5.24	
Charlotteburg	82	20	45.5	5.76	0.4
Chester	80	25	46.2	5.09	0.5
Deckertown	82	25	47.9	3.47	T.
Dover	86	23	47.5	5.22	
Egg Harbor City	85	28	49.6	6.01	T.
Elizabeth†	85	27	48.4	4.73	
Englewood	86	27	48.4	.....	0.5
Franklin Furnace	82	24	46.6	3.77	
Freehold	81	27	48.8	5.26	T.
Friesburg	.....	.....	.....	5.34	T.
Gillette	83	32	46.2	4.30	0.5
Hammonton	.....	.....	.....	5.57	
Hanover	82	28	48.0	3.56	
Hightstown	87	28	51.0	4.22	
Imlaystown	84	29	49.1	3.91	
Junction	.....	.....	.....	7.75	T.
Lambertville	85	26	49.3	4.65	
Millville	88	27	52.4	6.86	
Moorestown	84	27	51.3	5.12	T.
Newark *a*	83	30	48.4	4.28	T.
Newark *b*†	85	31	49.1	4.49	T.
New Brunswick *a*	85	27	50.2	4.61	T.
New Brunswick *b*	84	27	48.8	4.71	T.
Newton	84	24	47.6	3.75	
Ocean City	71	30	47.5	5.06	
Oceanic	88	32	51.1	5.09	T.
Paterson	88	28	50.0	4.58	
Perth Amboy	84	30	49.8	4.07	
Plainfield	85	26	49.4	4.31	T.
Pochunk Mountain	82	24	46.9	4.36	T.
Rancocas *	85	30	.....	4.56	T.
Readington *1	82	34	52.3	.....	
River Vale	86	23	47.6	4.11	
Salem	87	28	52.6	5.13	
Somerville	89	21	49.8	4.46	T.
South Orange	83	28	48.0	4.35	T.
Toms River	86	24	47.8	5.74	T.
Trenton	84	28	52.4	5.56	
Vineland	85	26	51.2	5.39	
Woodbine	84	25	49.8	5.27	
New Mexico.					
Albert†	85	29	57.3	0.10	
Albuquerque†	80	22	55.3	0.08	T.
Alma†	87	20	55.8	0.04	
Aztec†	80	19	51.2	0.00	
Deming *6	88	40	60.5	T.	
East Las Vegas†	80	20	52.9	0.52	1.6
Eddy†	93	32	63.8	0.10	
Engle†	92	21	59.3	0.02	
Espanola	77	20	51.6	0.09	
Estalina Springs†	79	10	49.6	0.19	T.
Fort Bayard	83	18	54.6	0.00	
Fort Stanton†	83	21	52.7	T.	
Fort Wingate	78	13	49.9	0.30	1.0
Galisteo†	85	21	53.3	0.00	
Gallinas Spring†	83	26	56.6	0.22	
Gila	88	30	57.2	T.	
Lordsburg *3	85	39	63.3	0.00	

TABLE II.—*Meteorological record of voluntary and other cooperating observers*—Continued.

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
New Mexico—Cont'd.	°	°	°	*Ins.*	*Ins.*
Los Lunas	86	25	57.0	0.25	
Monero†	74	7	43.3	0.03	T.
Ocate†	78	12	47.0	0.58	T.
Ollo†	82	23	52.8	0.00	
Puerto de Luna	92	30	61.8	T.	
Raton†	84	14	52.0	0.40	4.0
Rincon†	93	22	61.8	T.	
Roswell†	93	30	63.6	0.14	
San Marcial†	88	26	57.4	0.06	
Socorro	80	29	56.9	T.	
Springer†	74	24	47.8	0.01	T.
Taos	80	15	50.6	0.21	
New York.					
Addison	78	14	46.7	1.31	.....
Akron	.....	.....	.....	2.06	
Albany	.....	.....	.....	.....	T.
Alfred Center	74	18	44.2	1.61	2.0
Angelica†	77	17	43.1	2.72	1.0
Appleton	72	22	43.0	1.79	T.
Arcade	72	13	43.2	1.51	1.0
Arkwright	70	23	44.6	.....	
Atlanta	.....	.....	.....	1.62	
Baldwinsville	75	23	45.4	1.80	T.
Bedford	84	24	47.2	5.37	3.6
Big Sandy*[10]	73	28	44.4	.....	
Binghamton†	78	22	45.8	2.29	T.
Brentwood	85	26	46.3	4.50	0.5
Brookfield	74	16	44.1	2.14	T.
Brooklyn	86	30	49.1	4.06	T.
Buffalo	.....	.....	.....	.....	0.5
Canton	73	14	41.1	2.47	
Charlotte*[10]	69	28	40.8	.....	
Cherry Creek	.....	.....	.....	2.65	
Cooperstown†	75	20	41.9	2.89	
Cortland	73	24	44.6	1.62	
Demster	.....	.....	.....	2.34	
Deposit	.....	.....	.....	0.79	
Elmira†	76	27	50.5	1.56	
Fleming	72	21	44.7	1.40	
Fort Niagara†	72	25	43.2	1.73	
Friendship	76	19	45.2	1.96	T.
Fulton	.....	.....	.....	1.54	
Glens Falls	81	23	45.0	6.09	1.1
Gloversville	75	20	44.1	4.48	0.2
Hamilton	76	18	42.8	2.48	T.
Honeymead Brook	84	22	45.6	4.25	2.0
Humphrey†	74	19	44.7	1.31	2.0
Ithaca	76	23	44.8	1.47	T.
Jamestown*[2]	74	25	47.7	.....	
Kings Station	.....	.....	.....	6.32	
Lebanon Springs	79	21	48.3	3.99	1.0
Le Roy	80	16	44.5	2.73	1.0
Lowville	73	15	41.7	2.00	
Lyons	73	26	46.4	1.54	T.
Madison Barracks†	72	25	43.4	1.53	3.2
Malone	72	15	40.5	2.71	1.3
Manhattan Beach†	68	28	45.6	2.90	
Massena	80	10	45.0	1.00	
Middletown	81	25	47.0	4.28	2.0
Minnewaska	75	20	42.4	7.45	
Mount Morris	81	19	45.9	1.62	0.1
Newark Valley	.....	.....	.....	2.70	
New Lisbon	77	16	41.8	3.21	
New York	.....	.....	.....	.....	1.0
North Hammond*[1]	72	18	44.0	2.70	2.9
Number Four†	70	12	40.0	2.79	7.1
Ogdensburg	69	17	42.7	2.61	3.0
Oneonta	77	22	48.2	3.33	
Oswego	.....	.....	.....	.....	T.
Oxford	78	19	44.6	2.76	T.
Palermo†	75	20	43.6	0.52	
Perry City	73	18	43.5	1.37	T.
Pine City	.....	.....	.....	1.26	
Plattsburg Barracks	70	19	42.8	2.79	1.0
Port Jervis	85	22	47.0	4.67	
Potsdam	69	15	40.4	1.17	
Poughkeepsie	83	25	46.5	3.54	
Rochester	.....	.....	.....	.....	0.6
Rome	73	23	48.2	2.55	.....
Romulus	78	21	44.8	1.37	
Saranac Lake	74	12	38.9	2.30	2.5
Saratoga Springs	73	26	46.6	.....	.....
Scottsville	.....	.....	.....	1.78	
Setauket†	78	29	46.2	3.01	
Skaneateles	.....	.....	.....	1.86	
South Canisteo	78	18	45.2	1.49	T.
South Kortright†	76	15	43.4	3.31	
Stillwater	82	20	45.8	4.39	T.
Turin	66	17	40.4	0.87	0.4
Varysburg	80	18	45.4	2.44	4.2
Wappingers Falls	76	25	47.5	4.17	0.2
Warwick	.....	.....	.....	4.33	
Watertown	76	17	44.0	2.06	
Waverly†	80	28	46.8	1.83	T.
Wedgwood	77	18	44.2	1.58	1.0
West Chazy	.....	.....	.....	2.85	
West Point†	85	27	47.3	6.81	
Willets Point	65	29	46.2	4.09	
North Carolina.					
Armour	76	26	53.6	4.32	
Asheville†	80	30	57.2	4.04	
Bailey*[5]	88	29	60.6	4.99	
Bakersville†	82	25	51.4	4.73	
Blowing Rock†	70	27	45.1	4.54	T.
Bryson City†	.....	.....	.....	3.97	
Chapel Hill†	85	29	57.4	11.42	
Charlotte	.....	.....	.....	.....	T.
Currituck Inlet†	.....	.....	.....	4.98	
Experimental Farm	82	33	57.8	7.87	
Fair Bluff†	.....	.....	.....	8.72	
Falkland*[1]	82	32	56.3	9.87	
Fayetteville†	85	35	59.6	9.21	
Flat Rock	78	27	53.0	8.27	
Goldsboro	84	38	60.2	8.86	
Greenville	.....	.....	.....	9.09	
Henderson	85	30	56.4	14.60	
Highlands	74	22	48.6	14.84	T.
Horse Cove†	78	26	53.9	10.92	
Lenoir*[1]	80	29	55.7	5.85	
Linville†	71	25	48.6	9.60	1.5
Littleton†	85	31	56.9	9.10	
Louisburg†	84	29	57.2	5.65	
Lumberton†	84	36	60.8	9.98	
Lynn*[2]	84	.....	57.2	7.62	
Marion	82	25	54.3	4.45	
Mocksville†	82	29	57.4	5.12	
Moncure†	83	30	57.2	10.74	
Morganton*[1]	82	33	58.1	5.49	
Mount Airy†	83	26	55.0	5.37	
Mount Pleasant	83	29	57.7	6.33	
Murphy†	.....	.....	.....	4.21	
Newbern†	85	36	60.7	10.20	
Oak Ridge†	85	28	56.8	5.37	
Pantego	.....	.....	.....	9.72	
Pittsboro	82	31	55.8	13.40	
Raleigh*[1]	82	32	60.2	6.75	
Rockingham†	88	34	61.2	7.35	
Roxboro†	85	29	56.2	6.12	
Rutherfordton	77	27	56.2	5.95	
Salisbury	82	40	59.9	5.55	
Saxon†	86	24	56.9	4.16	
Selma	85	32	58.3	8.66	
Shelby†	80	29	55.3	4.17	
Skyuka	74	31	53.2	7.44	
Sloan†	83	34	59.5	8.04	
Soapstone Mount†	84	25	55.8	7.49	
Southern Pines†	83	34	59.8	6.83	
Southport†	78	38	60.2	6.53	
Waynesville†	78	26	53.2	3.09	T.
Weldon	81	32	57.2	8.08	
Willeyton	90	34	58.4	6.43	
North Dakota.					
Ashley†	84	20	49.2	1.24	.....
Berlin†	82	20	50.2	1.58	.....
Bismarck	.....	.....	.....	.....	0.4
Bottineau†	75	26	48.8	0.80	
Churchs Ferry	81	22	48.4	1.46	
Devils Lake	78	24	49.8	5.16	
Dickinson†	80	.....	.....	1.36	
Ellendale[1]	85	25	52.5	1.81	T.
Fargo	82	18	49.2	1.36	
Forman†	83	19	53.4	1.33	.....
Fort Berthold†	84	20	52.6	1.13	
Fort Yates†	79	21	52.0	2.97	.....
Gallatin†	81	19	49.3	1.43	
Grafton†	83	22	48.4	3.22	.....
Jamestown†	78	23	51.7	1.23	.....
Kelso†	83	19	48.4	0.64	
Lakota†	79	23	49.9	1.79	
Larimore†	87	22	51.6	1.19	
Lemert	85[4]	23[4]	50.1[4]	2.60	.....
McKinney	76	19	48.0	1.60	
Milton†	75	15	46.4	1.75	
Minto†	84	20	49.0	1.59	
Napoleon†	82	25	49.4	1.98	
New England City†	80	10	48.8	0.70	.....
Oakdale†	75	29	49.4	1.92	
Portal†	79	24	49.6	1.52	0.2
Power†	79	22	49.8	1.13	.....
St. John†	74	24	47.0	1.58	
Sheyenne	80	20	50.2	2.20	
Steele†	82	22	50.0	1.67	0.5
University†	80	20	49.2	0.98	
Wahpeton	84	22	52.1	1.40	
Washburn	82	19	50.6	4.09	
White Earth	78	18	48.2	3.38	
Wild Rice†[3]	.....	.....	50.0	2.17	.....
Williston	.....	.....	.....	.....	1.5
Willow City†	79	21	48.4	1.81	.....
Woodbridge†	79	22	46.8	1.04	.....
Ohio.					
Akron	80	23	50.1	1.98	0.5
Annapolis	86	21	50.1	1.08	T.
Arcanum	.....	.....	.....	1.26	T.
Ashland	81	26	50.5	2.15	
Ashtabula	77	23	44.8	1.67	T.
Athens	84°	26°	55.1°	1.55	
Atwater	.....	.....	.....	1.37	
Auburn	80	19	48.1	2.05	0.5
Bangorville	81	31	50.8	1.77	T.
Bellefontaine	82	24	52.2	3.32	0.5
Benton Ridge	80	22	52.2	1.26	0.2
Berlin Heights	83	23	48.9	2.10	
Bethany	83	26	53.0	2.28	
Big Prairie	86	22	51.6	1.52	
Binola	82	26	51.3	1.78	
Bissells	79	21	48.7	1.67	0.9
Bloomingburg	85	24	52.8	2.89	
Bloomington	.....	.....	.....	3.08	
Bowling Green	84	23	49.8	2.58	2.3
Bucyrus	82	22	52.8	2.97	0.2
Caledonia†	.....	.....	.....	2.80	0.2
Cambridge	81	21	51.2	2.18	
Camp Dennison	84	28	54.4	2.43	T.
Canal Dover	83	22	50.3	1.78	T.
Canton†	82	24	51.2	1.84	0.3
Cardington	82	21	49.2	2.57	
Carrollton	88	20	51.2	1.23	T.
Cedarville	.....	.....	.....	2.33	
Celina	87	28	55.1	1.87	0.5
Cherry Fork	88	27	54.4	3.18	
Cincinnati	.....	.....	.....	.....	T.
Circleville*a*†	.....	.....	.....	3.72	
Circleville*b*	86	27	55.0	3.75	
Clarksville	81	26	53.6	3.14	T.
Cleveland	78	26	49.1	1.63	
Cleveland (W. B.)	.....	.....	.....	.....	0.2
Clifton	83	23	52.4	1.88	
Coalton	86	23	53.0	1.53	
Colebrook	79	16	46.8	1.85	0.5
Columbus	.....	.....	.....	.....	T.
Cynthiana	85	30	52.4	3.56	
Dayton*a*	84	27	53.9	1.71	T.
Dayton*b*†	.....	.....	.....	1.80	T.
Defiance	84	24	50.9	1.02	
Demos	81	22	52.5	1.97	
Dupont	83	23	50.6	1.97	T.
Ellsworth	80	19	50.0	1.53	T.
Elyria	85	20	49.0	1.28	0.1
Fairpoint Harbor*[10]	68	24	42.6	.....	.....
Fayetteville	82	27	53.2	3.51	T.
Findlay	83	26	51.5	2.78	T.
Fostoria	82	25	50.5	3.24	1.0
Frankfort	85	29	53.8	3.08	
Garrettsville	79	19	47.9	1.73	0.3
Georgetown	87	26	56.3	3.79	
Granville	83	24	51.8	2.00	T.
Gratoit	84	25	52.2	2.32	0.8
Greenfield	82	29	53.9	3.40	
Greenhill	84	19	49.1	1.17	T.
Greenville	80	26	52.1	1.66	T.
Hackney	82	28	53.6	2.23	
Hanging Rock	84	29	53.7	2.24	
Hebbardsville	84	26	56.2	1.34	T.
Hedges	85	19	50.3	1.30	2.0
Hillhouse	78	19	47.4	1.28	
Hillsboro	87	27	53.3	2.78	T.
Hiram	79	21	49.4	1.81	
Jacksonboro	87	27	54.2	1.35	
Kenton†	86	25	53.1	2.97	
Kilbourne	80	28	51.3	3.03	T.
Killbuck	85	24	51.2	1.37	
Leipsic	82	20	50.6	2.80	0.5
Levering	88	18	48.6	2.61	
Logan	90	26	54.8	0.99	T.
Lordstown	81	19	47.5	1.56	T.
Lowell	86	22	51.6	1.34	
McArthur	84	27	52.7	1.68	
McConnellsville	82	25	51.3	1.54	T.
Mansfield†	.....	.....	.....	2.48	0.5
Marietta*a*†	.....	.....	.....	1.64	
Marietta*b*	87	27	54.7	1.17	
Marion	86	23	51.2	.....	T.
Medina	81	21	49.4	1.75	1.0
Milfordton	80	19	49.1	2.51	T.
Milligan	87	20	52.4	1.48	1.0
Montpelier	83	25	49.8	1.61	2.0
Napoleon	84	25	50.0	1.54	2.2
New Alexandria	81	23	51.7	2.60	4.5
New Berlin	82	22	50.2	2.19	
New Bremen	85	26	52.2	1.42	
New Comerstown	83	24	51.7	1.53	
New Holland	85	26	53.2	2.83	T.
New Moscow	.....	.....	.....	1.39	.....
New Paris	78	28	52.6	1.45	
New Waterford	.....	.....	.....	1.76	
North Lewisburg	86	24	52.0	2.15	
North Royalton	79	21	49.3	1.59	1.0
Northwood	86	22	52.0	2.61	T.
Norwalk	85	17	47.9	2.35	0.5
Oberlin	87	20	50.5	2.10	

TABLE II.—*Meteorological record of voluntary and other cooperating observers*—Continued.

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Ohio—Cont'd.	°	°	°	*Ins.*	*Ins.*
Ohio State University	82	23	51.6	3.40	
Orangeville	81	20	49.0	0.95	T.
Ottawa	82	25	51.1	1.81	
Pataskala	83	23	51.8	2.77	T.
Peoli	86	28	53.4	1.63	
Plattsburg	86	24	52.4	2.38	T.
Point Marblehead *10	84	30	47.1	.....	.....
Pomeroy	86	24	53.9	0.55	T.
Portsmouth *a* †	.....	.....	.....	2.11	
Portsmouth *b*	87	31	57.4	2.21	
Richwood	.....	.....	.....	1.84	T.
Ridgeville Corners	85	26	50.9	1.10	0.3
Ripley	82	28	54.4	3.92	
Rittman	80	19	46.8	1.80	
Rocky Ridge	85	22	49.8	1.99	1.4
Rosewood	80	24	51.5	1.58	2.0
Sandusky	.....	.....	.....	.....	0.4
Sharon Center	.....	.....	.....	1.47	
Shenandoah	83	22	49.2	2.30	1.1
Sidney *a* †	.....	.....	.....	1.55	
Sidney *b*	87	25	53.5	0.99	
Springboro	.....	.....	.....	2.13	T.
Steuben	.....	.....	.....	2.84	
Stoutsville	.....	.....	.....	3.13	
Sylvania	85	22	48.4	1.75	
Thurman	89	26	54.9	0.80	
Tiffin †	81	25	50.6	2.46	1.0
Toledo	.....	.....	.....	.....	0.9
Upper Sandusky	86	25	52.0	2.84	
Vanceburg	84	27	54.9	2.94	
Van Wert	85	23	51.1	1.43	0.8
Vermilion	82	33	48.6	1.89	0.5
Vickery	83	24	49.3	2.13	1.0
Walnut	.....	.....	.....	3.15	
Warren	82	21	49.9	1.40	
Warsaw	85	20	50.7	1.38	T.
Wauseon	85	22	50.4	2.10	1.4
Waverly	87	26	55.7	1.86	
Waynesville	.....	.....	.....	2.79	
Wellington	86	20	50.0	2.11	T.
Westerville	81	26	52.0	3.26	T.
Wheeler †	.....	.....	.....	2.12	
Willoughby	.....	.....	.....	1.14	0.5
Wooster *a*	80	21	49.5	1.69	0.2
Wooster *b* †	.....	.....	.....	1.76	.....
Youngstown	82	24	49.8	1.08	T.
Zanesville †	.....	.....	.....	1.23	
Oklahoma.					
Alva †	94	34	61.9	1.40	
Anadarko †	98	29	66.8	1.00	
Arapaho †	92	30	61.8	1.35	
Britton	.....	.....	.....	1.20	
Buffalo †	90	28	57.5	1.50	5.0
Burnett †	89	38	64.0	1.46	
Clifton †	93	30	64.5	0.84	
Fort Reno †	93	32	62.4	1.74	
Fort Sill	91	34	65.2	0.43	
Guthrie †	92	36	66.4	0.95	
Hennessey	91	39	67.9	.....	
Keokuk Falls †	92	32	61.2	1.28	
Mangum †	90	38	63.7	0.69	
Norman †	94	37	66.2	0.30	
Ponca †	97	34	64.6	1.30	
Pond Creek †	95	32	61.8	0.62	
Sac and Fox Agency †	89	35	63.9	0.97	
Winnview †	94	35	63.1	0.89	
Oregon.					
Albany *a* †	84	31	52.0	2.70	T.
Arlington †	87	26	53.6	0.50	
Ashland *b*	87	26	51.0	0.45	1.0
Aurora *a*	87	35	55.3	2.62	
Aurora (near)	85	28	51.2	3.25	
Baker City	.....	.....	.....	.....	1.2
Bandon	65	31	49.8	9.35	
Beulah	85	24	44.9	T.	T.
Brownsville *a	78	36	52.8	2.90	1.0
Burns †	80	4	39.9	.....	
Canyon City †	98	23	52.0	0.67	
Cascade Locks	85	34	52.6	5.34	
Comstock *a	84	31	51.1	3.54	
Condon	87	30	46.6	1.50	
Corvallis *a*	85	29	50.1	3.06	
Corvallis (near)	80	29	50.9	3.45	
Crook	86	16	46.9	2.11	
Detroit †	90	28	49.5	5.49	5.5
East Portland	82	30	.....	2.00	
Eugene †	80	32	51.6	3.35	
Fife †	67	16	37.0	0.45	T.
Forest Grove	84	27	50.4	3.33	T.
Gardiner	79	34	51.2	7.29	
Glenora	87	25	47.2	12.09	T.
Grants Pass *a* †	91	27	52.4	1.90	
Happy Valley †	80	12	44.5	1.41	2.5
Heppner †	83	27[c]	50.5[d]	0.55	
Hood River (near)	78	28	48.0	1.90	1.5
Hubbard	80	29	49.6	3.26	
Jacksonville	84	26	51.1	1.25	
Oregon—Cont'd.					
Joseph †	75	18	44.7	1.32	4.0
Junction City *2	80	26	46.3	1.81	
Lafayette *2	90	32	55.8	4.08	
La Grande †	84	21	50.4	1.70	
Lakeview †	.....	9	.....	0.52	2.0
Langlois	80	31	49.7	11.06	
Lone Rock	81	18	44.6	0.93	
Lorella	86	10	50.7	0.99	2.2
McMinnville *a* †	85	29	50.4	2.34	T.
McMinnville *b* *2	82	28	50.5	1.90	
Merlin *2	94	26	50.6	1.51	
Monmouth *2	81	37	56.1	2.30	
Mount Angel †	91	31	52.5	3.68	0.8
Nehalem	.....	.....	.....	9.22	
New Bridge	85	25	50.4	0.09	
Newport	74	32	47.6	6.29	
Pendleton	86	25	52.9	0.82	
Portland	.....	.....	.....	.....	T.
Riddles *2	86	26	48.6	2.45	
Salem *a* *2	80	47	59.4	3.45	
Salem *b* †	81	30	51.6	2.34	
Sheridan *2	82	34	53.7	2.82	
Silverton *2	80	36	53.1	2.57	
Siskiyou *2	84	25	53.4	0.30	3.0
Sparta	78	18	46.8	1.29	3.0
Springbrook	84	32	51.2	1.63	T.
Springfield *2	82	32	54.2	2.56	
The Dalles †	84	30	53.9	0.24	0.2
Toledo	85	27	48.6	6.84	
Umatilla †	.....	.....	.....	0.20	
Vale	84	14	50.2	0.46	
West Fork *2	94	32	52.2	5.19	4.0
Weston	83	28	52.4	1.44	
Williams	85	27	51.1	1.76	
Pennsylvania.					
Altoona	84	30	54.5	2.16	
Aqueduct	90	28	51.4	4.23	
Beaver Dam †	.....	.....	.....	1.29	
Bethlehem	.....	.....	.....	4.46	
Blooming Grove *1	78	24	45.8	5.21	2.5
Brookville †	.....	.....	.....	3.33	
Browers Lock	.....	.....	.....	4.94	
Carlisle	87	28	51.0	3.75	
Cassandra	80	24	49.2	3.61	T.
Chambersburg †	82	26	48.9	2.95	
Clarion †	.....	.....	.....	2.56	1.5
Coatesville	87	25	49.8	4.63	
Confluence †	.....	.....	.....	3.57	
Coopersburg	83	28	49.4	5.40	0.3
Davis Island Dam †	.....	.....	.....	1.80	
Doylestown	.....	.....	.....	5.08	
Drifton	80[d]	20[d]	47.2[d]	4.24	2.5
Dubois †	.....	.....	.....	4.41	0.1
Dyberry †	79	18	44.4	3.22	1.5
East Mauch Chunk	84	23	48.6	6.32	
Easton	81	29	49.6	3.91	
Edinboro *1	75	19	46.6	.....	
Ellwood Junction †	.....	.....	.....	1.66	
Emporium	82	20	49.1	2.53	T.
Erie	.....	.....	.....	.....	T.
Forks of Neshaminy *1	81	38	52.1	5.96	
Frederick	.....	.....	.....	5.15	
Freeport †	.....	.....	.....	2.33	
Gettysburg	85	28	49.8	3.27	
Girardville	.....	.....	.....	4.39	3.0
Grampian	84	20	47.2	3.81	0.5
Greensboro †	.....	.....	.....	3.88	
Greenville	80	20	47.4	2.35	
Hamburg	86	25	49.8	6.85	
Hollidaysburg	86	22	49.7	2.52	
Honesdale	77	24	45.8	3.39	1.8
Huntingdon †	86	25	50.0	1.97	
Johnstown †	85	25	52.0	4.38	
Kennett Square	85	26	50.2	5.74	
Lancaster	83	28	50.3	5.07	
Lansdale	.....	.....	.....	4.88	
Lebanon *2	84[b]	27	49.1	5.10	
Le Roy †	76	20	44.8	2.65	0.2
Lewisburg	86	25	49.6	2.41	
Lock Haven † *1	88	28[e]	50.8	0.79	
Lock No. 4 †	.....	.....	.....	2.49	
Lycippus	85	23	51.8	4.46	
Mahoning †	.....	.....	.....	3.40	
Oil City †	.....	.....	.....	2.63	
Ottsville	.....	.....	.....	4.99	
Parker †	.....	.....	.....	2.95	
Philadelphia *a*	.....	.....	.....	6.25	
Philadelphia *b*	84	31	52.1	5.59	T.
Philadelphia (W. B.)	.....	.....	.....	.....	T.
Phœnixville	85	30	50.5	5.19	
Pittsburg	.....	.....	.....	.....	0.2
Point Pleasant	.....	.....	.....	5.99	
Pottstown	87	30	51.7	5.13	
Quakertown	84	25	47.9	5.41	T.
Reading[g]	.....	.....	50.0	4.28	
Ridgway †	.....	.....	.....	3.35	
Saegerstown	80	17	47.2	1.40	T.
Pennsylvania—Cont'd.					
Saltsburg †	.....	.....	.....	4.22	
Seisholtzville	.....	.....	.....	7.09	
Selinsgrove	85	26	49.2	2.55	
Shinglehouse	78	18	46.1	1.81	
Smethport	76	18	46.0	2.46	1.0
Smiths Corners	.....	.....	.....	5.60	
Somerset	80	20	47.8	2.58	
South Bethlehem	84	28	49.2	.....	
South Eaton	81	25	47.4	3.60	
State College	80	23	48.4	2.23	T.
Stoyestown †	.....	.....	.....	3.04	3.0
Swarthmore	.....	.....	.....	5.53	
Towanda	80	25	46.8	1.70	T.
Uniontown	80	27	51.4	4.12	T.
Warren †	.....	.....	.....	3.05	T.
Wellsboro *2 †	74	20	42.7	2.21	T.
West Chester	84	29	50.0	5.37	
West Newton †	.....	.....	.....	3.54	
White Haven	80	21	45.2	4.24	
Wilkesbarre †	85	26	49.9	2.71	
Williamsport	82	29	50.0	2.17	
York †	84	28	50.0	3.74	T.
Rhode Island.					
Bristol	68	28	44.8	6.30	
Kingston	68	23	43.8	6.54	T.
Lonsdale	.....	.....	.....	6.20	
Pawtucket	78	30	47.2	6.02	
Providence *a*	80	28	47.4	6.25	T.
Providence *c*	81	26	45.4	6.67	0.5
South Carolina.					
Anderson †	.....	.....	.....	4.06	
Blackville	85	37	62.8	3.78	
Blenheim *3	.....	36	56.0	6.86	
Camden †	.....	.....	.....	6.05	
Central	94	28	63.0	5.84	
Cheraw *a* †	86	34	60.2	6.15	
Cheraw *b* †	.....	.....	.....	7.10	
Conway †	.....	.....	.....	6.61	
Darlington *1	81	43	60.4	.....	
Edisto †	.....	.....	.....	4.11	
Effingham †	.....	.....	.....	6.08	
Georgetown †	80	40	61.9	3.80	
Gillisonville †	87	36	63.1	4.61	
Greenville †	82	29	58.0	5.89	
Greenwood †	86	36	61.2	4.48	
Hardeeville †	82	41	63.6	4.73	
Holland †	84	38	59.1	5.27	
Kingstree *a*	85	35	63.9	4.06	
Kingstree *b* †	.....	.....	.....	4.10	
Little Mountain	90	32	62.0	7.64	
Longshore †	83	32	59.4	5.39	
McCormick *† *1	86	34	61.4	.....	
Manning *2	87	.....	60.6	4.80	
Mount Carmel †	.....	.....	.....	4.87	
Pinopolis *1	80	42	61.1	6.07	
Port Royal †	81	45	64.7	3.51	
Ridgeway †	82	36	59.9	6.25	
St. George †	84	40	63.1	3.58	
St. Matthews †	86	40	63.4	6.88	
St. Stephens †	.....	.....	.....	5.63	
Santuck †	85	29	59.2	5.58	
Shaws Fork *1	88	40	64.9	3.10	
Society Hill †	82	37	60.4	8.67	
Spartanburg	90	29	60.9	4.96	
Statesburg †	82	38	61.9	9.80	
Trenton	82	40	62.6	6.37	
Trial †	83	39	62.2	3.90	
Watts *5	89	31	60.3	5.35	
Yorkville	84	32	59.6	5.25	
South Dakota.					
Aberdeen †	90	25	53.2	5.04	
Alexandria †	84	18	54.0	2.36	2.0
Ashcroft †	85	13	48.6	1.90	4.0
Bowdle *† *1	80	25	54.2	2.75	.....
Brookings †	79	27	52.4	2.41	
Buffalo Gap *1	86	30	58.1	0.35	
Castlewood †	82	20	52.5	1.52	
Clark †	82	27	54.4	1.91	
Cross †	76	14	46.8	2.29	8.0
De Smet	.....	.....	.....	1.53	
Edgemont	.....	.....	.....	3.41	
Farmingdale	.....	.....	.....	1.49	
Faulkton †	83	25	52.2	2.06	
Flandreau †	87	24	55.2	2.64	
Forestburg †	85	27	55.6	1.89	0.5
Fort Meade	79	17	50.6	2.91	
Gary †	86	25	52.1	2.11	
Greenwood	88	31	57.6	4.57	
Highmore †	83[b]	25[e]	53.5[e]	2.08	
Hitchcock	.....	.....	.....	2.48	
Hotch City †	84	20	54.1	3.00	T.
Howard †	81	25	52.3	2.32	
Huron	.....	.....	.....	.....	0.4
Kimball †	85	26	55.6	1.52	
Leslie †	90	24	56.0	0.04	
Millbank †	.....	.....	.....	2.50	
Northville *1	80	25	51.9	1.25	

TABLE II.—*Meteorological record of voluntary and other cooperating observers*—Continued.

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
South Dakota—Cont'd.	°	°	°	*Ins.*	*Ins.*
Nowlin	86	21	53.5	1.08	
Oelrichs†	84	18	51.4	T.	T.
Parker†	86	28	54.6	4.05	
Parkston†	89	21	53.2	2.81	
Pierre					1.0
Plankinton†	87	29	55.6	2.93	1.5
Rapid City					1.5
Rosebud†				2.74	
Shiloh†	86	14	53.1	2.67	
Silver City				3.47	13.5
Sioux Falls†	82	27	55.2	2.84	
Spearfish†	83	26	49.0	3.91	18.0
Vermillion	86	26	56.9	3.35	
Watertown	79	30	52.0	1.87	
Webster†	82	23	54.9	1.68	
Wentworth†	81	28	54.0	2.33	
Wessington Springs†	86	28	55.7	2.32	
Tennessee.					
Andersonville*[1]	82	32	55.9	3.00	
Ashwood*†[1]	80	35	58.9	3.58	
Bristol†		28		1.63	T.
Byrdstown†	84	30	58.9	5.12	
Carthage†				7.42	
Clarksville	85	32	59.6	3.80	
Clinton†				3.96	
Columbia†				2.74	
Elizabethton	83	31	56.2	2.37	T.
Fairmount*	76	35	56.2		
Florence Station†	84	31	59.0	6.12	
Franklin†	86	30	58.0	5.33	
Greeneville†	83	28	56.0	2.35	
Harriman†	87	29	56.2	3.90	
Hohenwald*[2]		33	55.8	2.32	
Jacksboro*[4]	81	29	54.6	4.39	
Jackson†	87	33	61.2	3.38	
Johnsonville†				2.50	
Loudon†				4.55	
Lynnville*[1]	82	34	60.1	4.00	
McMinnville†	84	28	58.7	6.15	
Mount Carmel	85	34	61.2	1.88	
Newport*[3]	82	29	55.6	3.02	
Nunnelly*[1]	84	37	61.0	3.36	
Palmetto†				3.79	
Parksville*[1]	82	30	58.6	3.77	
Riddleton†	86	32	60.1	6.23	
Rockwood†				5.03	
Rogersville*[1]	79	28	55.8	1.87	T.
Rugby*[1]	82	32	54.7	6.93	
Savannah*[1]	90	35	63.0	1.67	
Springdale*[1]	80	32	59.0	3.40	
Trenton	88	32	59.8	0.91	
Tullahoma*†[1]	80	27	57.3	4.25	
Waynesboro*[1]	84	32	57.7	2.69	
Texas.					
Albany*†[1]	80	40	61.2	1.90	
Amarillo					6.5
Arthur City†				1.97	
Aurora*[1]	94	38	68.3	2.20	
Austin δ*[5]	85	43	68.8		
Boerne*†[1]	90	44	67.6	0.51	
Brady†	90	34	66.3	2.32	
Brazoria†	86	42	68.2	0.69	
Brenham†	88	41	68.3	2.94	
Burnet*†[1]	88	48	71.3	3.16	
Camp Eagle Pass†	98	42	72.1	0.40	
Coleman*[2]		41	62.0	3.83	
College Station	85	41	67.3	1.71	
Colmesneil				1.45	
Columbia†	86	42	68.3	0.37	
Corsicana α†	92	36	69.0	3.40	
Corsicana δ†	88	37	65.4	3.31	
Cuero†	90	49	71.2	0.31	
Dallas†	93	33	67.4	2.38	
Devine	89	38	68.4	0.64	
Durham†				1.61	
Duval*[1]	94	46	71.8	2.50	
Estelle†	94	37	67.2	2.85	
Flower Bluff†	85	46	71.6	4.41	
Forestburg†	86	34	63.6	5.62	
Fort Brown†	92	48	72.6	0.60	
Fort Clark	96	46	72.1	0.34	
Fort Hancock	94	19	60.7	0.06	
Fort McIntosh	98	46	75.0	T.	
Fort Ringgold†	98	45	77.6	0.02	
Fort Stockton†				0.00	
Fort Worth	90*	42*	69.5*	2.68	
Fredericksburg*†[1]	88	37	66.0	1.63	
Golindo				2.45	
Graham†	92	32	66.2	2.70	
Grape Vine†	98	38	67.0	2.56	
Hale Center†	89	30	62.8	0.50	
Hallettsville†	91	38	69.5	0.89	
Happy	90	24	57.5	0.24	2.2
Hartley†				0.05	0.5
Haskell†				2.45	
Hewitt				2.52	
Houston†	86	39	66.2	1.38	

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Texas—Cont'd.	°	°	°	*Ins.*	*Ins.*
Huntsville†	86	34	68.4	2.40	
Lampasas*[1]	90	31	65.1	6.17	
Leakey†	91	44	70.0	0.40	
Llano*†[3]	93	39	69.5	2.70	
Longview†	90	34	67.0	1.49	
Luling†	91	41	68.8	0.35	
McGregor†	87	33	65.0	2.74	
Marshall†	87	34	65.4	1.00	
Menardville*†[1]	91	45	65.3	0.76	
Midland†	98	32	65.6	0.00	
Mountain Spring†	92	37	66.6	4.08	
Mount Blanco†	88	33	60.8	1.02	
New Braunfels†	89	43	68.2	0.32	
Orange†	85	39	65.9	0.08	
Panter†	92*	50*	68.2*	2.83	
Paris†	88	35	65.6	2.00	
Roby†	90	35	64.4	5.17	
Rockport*[1]	88	52	72.0		
Rock Springs†				2.56	
Round Rock*†[3]		44	69.0	1.90	
Runge	89	46	72.4	1.01	
San Antonio	92	48	70.8	0.30	
San Marcos α†				1.39	
San Marcos δ†	92	40	69.2	1.41	
Sierra Blanca†	85	25	63.0	0.00	
Stafford†	89	38	68.4	1.45	
Sulphur Springs†	95	32	67.3	1.10	
Temple†	91	40	67.6	2.90	
Tyler†	88	35	65.2	1.63	
Waco†	92	38	69.6	3.91	
Weatherford	88	40	66.8	3.26	
Wichita Falls†	85	22	64.8	1.43	
Utah.					
Alpine City†				1.62	
Blue Creek*[3]	80	30	59.2	0.10	
Castle Gate†	90	15	51.3	0.30	
Cisco†	85	16	57.1	T.	
Corinne*[3]	78	27	59.2	0.25	
Deseret†	83	15	49.0	0.84	
Emery				T.	
Fillmore†	85	7	48.6	1.23	
Fort Duchesne†	76	18	47.9	0.00	
Giles†	85	19	54.0	T.	
Grouse Creek*†[1]	79	18	43.8	0.08	
Grover†	73	11	43.8	0.03	0.2
Heber†	80	14	46.4	0.48	0.5
Kelton*[3]	69	30	46.9	0.00	
Koosharem	73	11	42.4	0.16	
Levan†	78	18	51.5	5.10	
Loa†	73	5	40.9	0.05	0.5
Logan	76	19*	48.4	1.05	T.
Manti†	80	14	54.1	0.07	
Moab†	89	19	57.2	0.02	
Mount Pleasant*†[1]	80	18	46.8	0.80	
Ogden α[3]	82	34	52.1	0.10	
Pahreah†	85	24	54.8	0.05	
Parowan†	78	15	48.5	0.47	
Promontory*[3]	80	32	49.2	0.70	
Provo City†[3]			48.6	0.19	
St. George†	94	24	57.6	0.32	
Salt Lake City					T.
Snowville†	76	19	46.6	0.76	
Soldier Summit†	75	8	43.3	0.32	
Terrace*[3]	79	27	54.5	0.00	
Thistle†	82	16	46.2	0.91	1.0
Vernal†	76	20	49.8	0.06	
Vermont.					
Brattleboro	83	21	45.0	4.18	0.2
Burlington†	70	20	45.0	1.65	T.
Cornwall	70	19	43.8	2.05	
Enosburg Falls†	70	17	42.6	2.59	2.0
Hartland†	77	13	41.3	6.00	1.2
Irasburg†	68	9	38.8	3.68	1.5
Jacksonville	69	14	39.2	6.31	
Northfield					0.5
Norwich*[3]	75	15	41.5	4.50	0.5
St. Johnsbury	68	14	41.4	3.55	T.
Simonsville	72	16	34.0	4.40	
Strafford*†[1]	69	16	41.2	3.11	1.0
Vernon*[3]	76	22	44.3	5.81	
Wells	73	18	42.6	3.36	0.5
Woodstock	77	12	42.0	7.15	1.0
Virginia.					
Abingdon†				1.16	0.8
Alexandria	87	34	52.4	4.44	
Ashland†	87	29	56.4	6.90	
Avon†	88	29	55.4	8.56	
Bedford City†	81	30	55.2	4.90	
Big Stone Gap†	84	25	52.2	2.23	T.
Birdsnest*†[1]	80	40	55.0	5.25	
Blacksburg	79	24	50.1	3.67	
Buchanan†				3.81	
Callaville†	86	29	55.9	9.61	
Cape Charles†	80	35	54.7	3.02	
Charlottesville	84	30	56.1	7.14	T.
Clarksville				9.86	
Dale Enterprise†	88	24	51.0	3.88	

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Virginia—Cont'd.	°	°	°	*Ins.*	*Ins.*
Danville				6.95	
Fredericksburg†	84	32	55.2	5.59	
Grahams Forge	74[f]	22[f]	51.4[f]	4.45	
Hampton	81	35	56.4	5.62	
Hot Springs	76	28	50.0		
Irwin†	85	24	55.0	5.53	
Lexington†	84	28	53.0	3.33	
Marion†	80	27	52.5	3.37	T.
Monterey†	78	26	48.1	4.70	6.0
Nottoway	88	27	56.1	7.64	
Petersburg†	88	31	56.6	7.55	T.
Radford†				3.65	T.
Richmond (near)†	95	29	57.8	7.91	T.
Richmond δ†				7.10	T.
Rockymount†	85	27	57.7	5.24	
Salem†	83	31	55.5	4.73	
Saltville	79	27	53.1		
Smithville†	80	30	55.6	4.77	
Spottsville†	84	30	56.2	5.87	T.
Stanardsville†	85	27	55.1	4.57	
Staunton†	86	28	52.7	4.21	
Stephens City†	89	28	54.2	3.68	
Sunbeam†	82	33	56.9	6.34	
Warsaw†	87	28	54.9	5.25	
Westbrook Farm	85	32	55.3		
Wytheville†	79	26	50.9	2.27	T.
Washington.					
Aberdeen†	81	30	49.0	7.93	0.3
Anacortes				2.80	
Ashford				4.48	2.8
Blaine†	69	28	42.2	2.58	
Bridgeport†	84	25	53.5	0.51	
Cascade Tunnel†	67	15	40.3	4.08	37.5
Centerville†	88	27	50.7	0.52	
Colfax†	79	25	49.8	0.51	
Dayton	83	30	53.2	1.12	
East Clallam					1.0
East Sound†	63	28	48.6	1.48	0.5
Ellensburg†	80	21	48.6	0.18	
Ellensburg (near)	84	22	49.7	0.21	
Ferry†	80	30	51.2	4.68	T.
Fort Simcoe	84	27	54.8	0.20	
Fort Spokane	82	22	49.5	0.56	
Grand Mound†	75	32	49.6	2.89	0.3
Hunters†[e]	74	15	43.4	2.22	1.5
Lakeside†	76	29	51.2	0.74	
Lapush†	63	31	45.4	9.73	
Madrone*†[1]	70	30	48.4	3.82	
Monte Cristo	68	22	44.2	9.60	65.5
Moxee Valley†	83	21	51.3	0.39	
Olga†	64	30	49.2	1.45	1.5
Pine Hill	85	29	50.6	0.69	1.0
Pomeroy	83	31	54.4	0.59	T.
Port Angeles					T.
Pullman†	76	25	48.2	0.83	
Rosalia†	78	24	47.2	0.61	0.2
Seattle					1.0
Silver Creek*[1]	78	30	47.3	4.47	3.0
Snohomish†	75	31	50.4	3.25	2.5
South Bend	84	29	50.2	11.39	
Spokane					0.2
Stampede†	77	22	45.0	1.99	19.0
Stillaguamish†	69	29	47.8	2.51	
Sunnyside†	85	22	52.2	0.06	
Tacoma†	72	30	49.2	2.29	
Tatoosh Island					T.
Union City†[1]	73	28*	46.5	7.85	
Vashon†	72	21	46.2	2.28	
Wenatchee Lake†	78	26	43.9		
West Ferndale†	67	33	49.2	3.08	
West Virginia.					
Beverly†	80	24	51.5	4.74	
Bloomery†	84	24	48.5	2.00	
Bluefield†	82	24	51.1	5.18	T.
Buckhannon α†				5.47	
Buckhannon δ†	80	28	52.3		
Burlington†	84	21	48.6	1.40	
Central Station*[1]	88	24	52.0	2.10	
Charleston†				2.60	
Cloverdale				4.32	
Davis†	85	17	46.9	3.20	4.0
Elkhorn†	80	30	53.7	4.98	0.2
Ella†	82	22	52.6	2.00	T.
Fairmont†				2.76	
Glenville†	81	28	52.5	3.69	
Grafton†	82	27	52.4	4.15	T.
Green Sulphur	81	28	52.5	3.44	
Harpers Ferry†				2.83	
Hewett†	84	30	55.5	3.06	
Hinton α†				4.12	T.
Hinton δ†	84	29	54.8		T.
Leachtown†				1.91	
Madison†	77	28	53.1	1.10	T.
Marlinton†				4.41	
Martinsburg†	88	30	52.1	3.98	
Monarch*†[1]	80	33	55.1	2.16	
Morgantown α†				3.97	

TABLE II.—*Meteorological record of voluntary and other cooperating observers*—Continued.

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
West Virginia—Cont'd.	°	°	°	*Ins.*	*Ins.*
Morgantown *b* †	84	20	52.4	2.48	
New Cumberland †	88	23	55.2	.....	
New Martinsville †	85	28	54.5	2.84	
Nuttallburg †	90	30	53.7	0.90	
Parkersburg	.....	.....	.....	.....	T.
Pennsboro *	87	20	55.0	.....	
Philippi †	.....	.....	.....	3.77	
Pleasant Hill *[1]	74	30	50.7	3.80	4.0
Point Pleasant †	88	29	56.7	1.78	
Powellton †	86	24	54.3	3.06	T.
Rowlesburg †	.....	.....	.....	4.78	T.
Sandyville †	85	26	53.3	1.46	
Spencer	.....	30	.....	1.00	T.
Tannery *[1]	80	24	51.4	.....	1.5
Weston *a* †	.....	.....	.....	5.61	
Weston *b* *[1]	80	30	55.4	4.48	T.
Wheeling *a* †	.....	.....	.....	1.90	0.5
Wheeling *b* †	81	29	54.9	2.19	
Wiggins	90	29	51.8	.....	
Wisconsin.					
Amherst	78	23	46.9	1.17	
Antigo †	76	19	46.7	1.99	2.3
Apollonia *† [1]	77	13	52.2	1.53	1.4
Barron †	72	16	45.2	1.68	0.3
Bayfield	74	20	43.8	0.15	
Beaver Dam	77	30	49.6	1.08	
Belleville	85	22	48.0	0.78	
Beloit	84	37	50.1	1.31	
Berlin	82	28	53.8	0.69	
Black River Falls †	85	18	48.4	1.76	
Butternut †	77	14	45.8	0.38	
Centralia	80	24	49.2	1.05	
Chilton	78	27	47.0	1.51	
Chippewa Falls †	.....	.....	.....	3.69	4.0
City Point	82	17	47.8	1.39	1.5
Columbus	82	20	48.9	1.10	
Crandon †	75	11	42.6	1.15	2.0
Delavan †	82	25	48.6	1.09	
Depere †	77	25	45.6	0.91	0.5
Eau Claire	79	19	49.4	1.67	
Florence †	73	17	41.4	0.95	1.0
Fond du Lac †	77	24	46.1	0.97	
Grantsburg †	76	16	48.8	1.76	
Green Bay	.....	.....	.....	.....	0.6
Hartford †	.....	.....	44.8	1.02	
Harvey †	82	26	48.6	0.77	
Hayward †	74	18	45.0	0.83	0.8
Hillsboro	81	22	47.7	0.75	T.
Janesville †	84	25	48.8	1.56	
Kenosha	74	28	43.1	.....	
Koepenick *† [1]	76	10	44.8	2.10	
Lancaster †	88	24	51.3	0.62	1.0
Lincoln † [2]	.....	.....	46.2	1.37	
Madison †	80	28	49.0	1.06	
Manitowoc †	71	25	42.8	1.52	T.
Meadow Valley †	81	21	50.1	1.11	1.0
Medford †	75	15	46.2	1.05	0.6
Milwaukee	.....	.....	.....	.....	T.
Neillsville †	78	21	48.0	1.84	3.0
Wisconsin—Cont'd.	°	°	°	*Ins.*	*Ins.*
New Holstein †	79	26	48.7	1.61	0.5
Oconomowoc †	79	25	48.8	0.61	
Oconto	75	21	44.2	1.46	
Osceola †	79	20	49.0	1.95	
Oshkosh	77	10	45.8	1.30	1.0
Pepin	84	20	50.9	1.88	
Pine River †	79	21	47.6	1.49	1.0
Portage †	.....	.....	.....	1.65	
Port Washington	76	30	48.8	0.82	
Prairie du Chien	94	19	53.1	0.55	
Racine *[10]	76	30	44.3	.....	
Rhinelander †	78	22	45.2	0.29	T.
Royalton	81	24	47.8	1.20	3.0
Sharon †	82	25	48.6	2.13	
Shawano	78	20	45.4	1.42	1.5
Sheboygan *[10]	78	27	44.1	.....	
Spooner †	78	11	48.0	1.08	
Stevens Point †	80	24	48.8	0.89	2.0
Sturgeon Bay Canal *[10]	60	25	39.9	.....	
Two Rivers *[10]	72	28	43.7	.....	
Valley Junction †	82	21	48.2	1.57	0.5
Viroqua	87	23	50.2	1.30	
Watertown †	83	24	49.2	0.74	
Waukesha †	79	27	47.4	0.78	
Wausau	75	24	47.4	3.10	0.2
West Bend	76	25	45.8	1.08	
Westfield †	79	25	48.0	0.97	
Whitehall †	83	22	48.0	3.40	.....
Wyoming.					
Big Horn Ranch †	70	14	42.2	1.57	0.5
Cheyenne	.....	.....	.....	.....	9.4
Fort Laramie †	83	19	50.3	0.94	3.5
Fort Washakie	80	22	45.5	7.25	32.0
Fort Yellowstone †	.....	11	.....	0.61	.....
Lander	74	19	46.2	5.48	4.4
Lander (W. B.)	.....	.....	.....	.....	2.6
Laramie	67	13	40.0	0.87	3.0
Lusk	82	10	46.4	0.93	4.0
Saratoga †	74	8	41.4	1.00	4.0
Sheridan	80	6	47.6	2.29	1.5
Sundance	75	16	45.7	2.48	12.0
Mexico.					
Ciudad P. Diaz	94	46	72.9	0.47	
Leon de Aldamas	89	49	70.0	T.	
Mexico	84	49	65.4	0.55	
Puebla	88	50	69.4	0.47	
Topolobampo *[1]	90	65	73.9	0.00	
Vera Cruz [1]	88	67	77.4	0.11	
New Brunswick.					
St. John	56	20	39.9	2.84	1.4
Michigan.	°	°	°	*Ins.*	*Ins.*
Lansing	61	— 1	27.1	1.26	5.6
Pontiac *	59	— 4	28.2	0.12	.....
Missouri.					
Neosho	88	11	46.4	3.84	0.5

Received too late for publication in March, 1895.

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Alaska.					
Holy Cross Mission	41	—31	14.5	1.37	2.5
Yukon Delta *† [1]	34	—24	10.0	.....	.....

EXPLANATION OF SIGNS.

* Extremes of temperature from observed readings of dry thermometer.

† Weather Bureau instruments.

‡ Record furnished by the Arrowhead Reservoir Company, in the San Bernardino Mountains, San Bernardino County, Cal., at elevations varying from 4,900 to 6,900 feet.

A numeral following the name of a station indicates the hours of observation from which the mean temperature was obtained, thus:

[1] Mean of 7 a. m. + 2 p. m. + 9 p. m. + 9 p. m. ÷ 4.

[2] Mean of 8 a. m. + 8 p. m. ÷ 2.

[3] Mean of 7 a. m. + 7 p. m. ÷ 2.

[4] Mean of 6 a. m. + 6 p. m. ÷ 2.

[5] Mean of 7 a. m. + 2 p. m. ÷ 2.

[6] Mean of readings at various hours reduced to true daily mean by special tables.

[7] Mean from hourly readings of thermograph.

[8] Mean of 7 a. m. + 2 p. m. + 9 p. m. ÷ 3.

[9] Mean of sunrise and noon.

[10] Mean of sunrise, noon, sunset, and midnight.

The absence of a numeral indicates that the mean temperature has been obtained from daily readings of the maximum and minimum thermometers.

An italic letter following the name of a station, as "Livingston *a*," "Livingston *b*," indicates that two or more observers, as the case may be, are reporting from the same station. A small roman letter following the name of a station, or in figure columns, indicates the number of days missing from the record; for instance, "*a*" denotes 14 days missing.

No note is made of breaks in the continuity of temperature records when the same do not exceed two days. All known breaks, of whatever duration, in the precipitation record receive appropriate notice.

Note: The following changes have been made in the names of stations: Colorado, Spring Gulch, changed to Gulch; Ohio, Harbor changed to Ashtabula.

TABLE III.—*Data from Canadian stations for the month of April*, 1895.

Stations.	Pressure. Mean not reduced.	Mean reduced.	Departure from normal.	Temperature. Mean.	Departure from normal.	Precipitation. Total.	Departure from normal.	Prevailing direction of wind.
	Inches.	*Inches.*	*Inches.*	°	°	*Inches*	*Inches.*	
St. Johns, N. F	29.84	29.99	+ .11	35.4	— 0.8	1.71	.....	n.
Sydney, C. B. I	29.97	30.03	+ .16	36.6	+ 2.1	2.15	— 1.65	sw.
Grindstone, G. of St. L.	29.92	29.95	.....	32.8	.....	2.71	.....	n.
Anticosti, Gulf of St. L.	29.91	29.94	+ .02	33.2	+ 2.4	2.48	.....	n.
Halifax, N. S	29.90	30.03	+ .15	39.4	+ 1.9	3.95	+ 0.64	s.
Grand Manan, N. B	29.98	30.03	.....	40.1	.....	2.89	— 0.51	w.
Yarmouth, N. S	29.96	30.04	+ .13	39.8	+ 0.8	3.00	+ 0.06	s.
St. Andrews, N. B	29.94	29.99	.....	40.1	.....	2.99	+ 0.43	nw.
Charlottetown, P. E. I.	29.98	30.02	.....	36.6	.....	2.13	— 0.79	w.
Chatham, N. B	29.99	30.01	+ .09	37.2	+ 3.7	3.43	+ 0.33	w.
Father Point, Que	30.00	30.03	+ .12	35.9	+ 2.4	1.79	— 0.23	w.
Quebec, Que	29.70	30.04	+ .09	37.7	+ 3.2	3.49	+ 1.10	sw.
Montreal, Que	29.80	30.01	+ .05	41.0	+ 2.5	3.76	+ 1.32	ne.
Rockliffe, Ont	29.50	30.02	+ .06	38.8	+ 4.8	1.23	— 0.01	nw.
Kingston, Ont	29.71	30.03	+ .06	41.4	+ 2.9	1.89	— 0.06	ne.
Toronto, Ont	29.66	30.05	+ .06	42.4	+ 2.4	1.48	— 0.40	ne.
White River, Ont	28.72	30.10	.....	35.6	+ 4.5	0.99	+ 0.07	n.

TABLE III.—*Data from Canadian stations*—Continued.

Stations.	Pressure. Mean not reduced.	Mean reduced.	Departure from normal.	Temperature. Mean.	Departure from normal.	Precipitation. Total.	Departure from normal.	Prevailing direction of wind.
	Inches.	*Inches.*	*Inches.*	°	°	*Inches*	*Inches.*	
Port Stanley, Ont	29.38	30.03	+ .02	43.9	.....	1.57	— 0.56	e.
Saugeen, Ont	29.32	30.05	+ .05	40.4	+ 3.4	1.50	— 0.33	e.
Parry Sound, Ont	29.34	30.05	+ .07	39.6	+ 5.1	1.64	— 0.08	e.
Port Arthur, Ont	29.35	30.06	+ .04	38.0	+ 5.5	2.60	+ 1.23	ne.
Winnipeg, Man	29.18	30.01	— .02	44.8	—11.3	0.62	— 0.73	se.
Minnedosa, Man	28.16	29.97	— .01	44.7	+11.2	0.44	— 0.68	e.
Qu'Appelle, Assin	27.70	29.96	.00	45.0	+ 9.5	0.17	— 0.89	s.
Medicine Hat, Assin	27.62	29.92	.00	47.4	+ 3.4	0.26	— 0.25	w.
Swift Current, Assin	27.36	29.94	— .05	45.4	+ 6.9	0.04	— 1.14	w.
Calgary, Alberta	26.34	29.90	— .02	41.4	+ 3.4	0.58	— 0.04	w.
Prince Albert, Sask	28.40	29.92	.....	43.0	.....	0.35	.....	w.
Edmonton, Alberta	27.56	29.92	+ .01	42.4	+ 2.2	1.53	+ 0.96	sw.
Battleford, Sask	28.16	29.89	.....	45.4	.....	0.07	.....	w.
Spences Bridge, B. C	29.12	29.94	.....	49.9	.....	0.63	.....	w.
Hamilton, Bermuda	29.94	30.10	+ .05	64.2	.....	5.56	.....	s.
Esquimalt, B. C	30.00	30.03	.....	45.1	.....	2.02	.....	sw.

TABLE IV.—*Mean temperature for each hour of seventy-fifth meridian time, April, 1895.*

Stations.	1 a. m.	2 a. m.	3 a. m.	4 a. m.	5 a. m.	6 a. m.	7 a. m.	8 a. m.	9 a. m.	10 a. m.	11 a. m.	Noon.	1 p. m.	2 p. m.	3 p. m.	4 p. m.	5 p. m.	6 p. m.	7 p. m.	8 p. m.	9 p. m.	10 p. m.	11 p. m.	Midnight.	Mean.
Abilene, Tex.	60.0	59.0	57.9	56.7	55.5	55.8	54.4	54.3	57.4	60.9	64.8	67.8	70.7	73.0	74.8	76.0	76.9	76.3	74.2	72.3	68.7	66.1	64.4	62.4	65.0
Albany, N. Y.	42.9	42.3	41.7	41.0	40.4	40.5	41.7	43.5	45.7	47.8	49.5	51.0	52.4	53.4	53.9	54.0	53.2	51.9	50.1	48.4	47.2	45.9	45.1	44.5	47.0
Alpena, Mich.	37.0	36.7	36.2	35.9	35.6	35.5	36.7	38.7	41.0	42.2	43.2	44.1	44.8	45.2	44.8	44.8	44.2	43.3	41.8	40.3	39.9	39.3	38.6	37.9	40.3
Amarillo, Tex.	50.5	49.7	48.8	48.4	46.5	45.9	45.3	45.8	49.6	53.8	57.4	60.5	63.6	65.4	66.7	67.5	68.0	67.6	66.2	63.2	59.2	56.1	54.3	52.9	56.4
Atlanta, Ga.	57.0	56.1	55.3	54.5	53.9	53.4	53.1	54.4	55.8	58.3	60.9	62.8	64.0	65.5	66.5	67.4	68.0	67.1	65.6	63.2	61.8	60.5	59.3	58.3	60.1
Augusta, Ga.	56.9	55.9	55.2	54.5	53.9	53.4	54.3	57.0	59.7	62.4	64.7	67.1	68.2	69.5	70.1	70.2	69.5	68.1	66.5	64.4	62.2	60.7	59.1	58.0	61.7
Baker City, Oreg.	44.4	42.4	40.7	39.5	38.5	37.6	36.9	36.2	37.1	40.3	45.0	48.6	51.5	53.7	55.8	56.5	57.8	58.4	58.2	57.2	55.1	51.4	48.7	46.3	47.4
Baltimore, Md.	44.9	48.1	47.6	47.0	46.5	46.2	47.0	49.5	51.2	52.8	54.9	56.5	57.4	58.2	58.4	58.6	58.3	57.1	55.9	54.7	53.4	52.0	50.9	49.9	52.5
Bismarck, N. Dak.	44.6	43.4	42.1	40.9	39.4	38.2	37.6	38.8	42.0	46.1	51.0	54.9	58.1	60.0	61.6	62.3	62.8	62.7	61.0	58.3	53.4	50.3	48.7	46.7	50.2
Boston, Mass.	42.0	41.6	41.0	40.7	40.1	40.7	42.1	44.5	46.2	47.5	48.7	49.3	49.9	50.3	50.1	49.8	49.3	48.6	47.5	46.1	45.3	44.4	43.9	43.4	45.5
Buffalo, N. Y.	41.9	41.5	41.0	40.8	40.3	40.5	41.5	43.1	44.8	46.2	48.0	49.0	49.4	50.4	50.9	50.4	49.7	48.3	47.0	45.2	44.1	43.5	42.0	42.3	45.0
Charleston, S. C.	59.3	58.9	58.4	57.8	57.8	57.3	58.0	60.2	62.7	65.3	66.8	68.0	67.6	68.4	68.1	68.0	66.6	65.0	63.3	61.8	61.1	60.7	60.4	60.0	62.6
Charlotte, N. C.	53.5	52.7	52.0	50.9	50.6	49.9	50.3	52.6	54.7	57.2	59.7	61.7	63.5	64.5	64.9	65.0	65.0	64.0	62.1	59.9	58.3	57.2	55.8	54.4	57.5
Cheyenne, Wyo.	39.0	37.9	37.1	36.2	35.4	34.8	34.6	35.9	40.8	46.1	49.1	51.4	52.6	53.7	55.0	55.7	56.0	55.6	55.0	53.6	49.8	46.0	43.2	41.7	45.7
Chicago, Ill.	45.8	45.6	44.8	44.6	44.2	43.7	44.0	44.8	45.6	46.3	46.9	47.8	47.8	48.0	48.7	48.8	48.8	48.3	47.9	47.6	47.0	47.0	46.5	46.1	46.5
Cincinnati, Ohio.	53.0	51.9	51.3	50.6	49.9	49.2	48.7	49.5	50.6	53.3	55.7	57.4	58.8	59.9	61.0	61.8	61.7	61.4	60.8	59.7	58.8	57.4	56.3	55.7	55.6
Cleveland, Ohio	45.1	44.3	43.5	42.8	42.4	42.2	42.9	45.4	46.7	48.4	49.2	49.8	50.1	50.1	51.0	51.7	52.3	52.8	52.2	51.4	50.2	49.0	47.8	46.7	47.8
Columbus, Ohio	49.1	48.2	47.4	46.3	45.5	44.8	45.9	48.1	50.9	54.1	56.2	57.8	59.4	60.4	60.7	61.0	60.7	60.4	59.6	58.7	57.2	55.7	54.3	53.0	53.3
Denver, Colo.	46.2	45.0	43.5	42.4	41.4	39.9	39.1	38.8	41.4	45.4	51.5	55.2	57.6	59.0	60.2	60.4	61.0	61.0	60.4	59.9	58.7	56.1	53.6	51.2	48.5	50.7
Des Moines, Iowa	51.4	50.3	49.5	48.6	47.9	46.8	46.0	47.2	49.8	53.4	56.5	58.8	61.1	62.7	63.5	64.2	64.6	64.7	63.8	61.8	59.7	57.9	56.2	54.3	55.9
Detroit, Mich.	43.1	42.6	42.0	41.4	41.0	40.7	40.9	43.4	45.8	48.8	51.2	52.9	54.7	55.6	56.0	55.6	55.2	54.3	52.3	50.6	48.4	46.9	45.3	44.6	48.1
Dodge City, Kans.	51.2	50.3	49.2	48.5	47.4	46.5	45.9	47.5	52.9	57.1	60.6	63.2	65.4	66.8	68.3	68.2	68.1	67.4	66.2	62.7	59.3	57.5	55.3	53.4	57.4
Duluth, Minn.	39.6	39.1	39.1	38.6	38.2	37.8	37.6	38.3	39.1	40.3	41.6	42.5	43.4	44.6	43.5	43.7	43.5	43.5	42.9	42.5	41.8	41.5	41.2	40.7	41.0
Eastport, Me.	36.6	36.2	35.8	35.4	35.3	35.3	35.9	37.3	38.7	40.0	41.7	42.9	43.8	44.8	44.6	44.5	43.5	42.2	40.8	40.2	39.1	38.6	38.1	37.6	39.9
El Paso, Tex.	61.3	59.4	58.3	56.3	54.9	53.7	52.7	51.5	54.2	58.5	62.9	67.0	70.4	72.7	74.6	76.0	77.0	77.3	77.1	74.9	71.9	67.6	64.7	62.9	64.9
Fort Smith, Ark.	58.1	56.9	56.1	55.0	54.1	53.7	52.7	54.7	57.5	60.9	64.1	67.0	68.4	69.3	70.2	70.6	71.1	71.4	71.2	69.8	67.6	65.4	63.7	62.2	59.9	62.6
Galveston, Tex.	66.5	66.2	66.1	65.6	65.2	65.0	64.7	65.0	65.6	66.7	67.5	68.6	69.3	70.2	70.5	70.9	70.6	70.2	69.4	68.4	67.8	67.4	67.2	66.9	67.6
Grand Haven, Mich.	42.5	42.0	41.6	41.3	40.8	40.4	40.8	44.0	46.8	50.0	52.2	54.0	55.2	55.4	52.3	52.8	53.4	52.7	51.0	49.0	47.6	46.3	45.3	44.1	47.2
Havre, Mont.	43.8	43.2	41.4	39.8	38.3	36.6	38.1	37.3	39.7	44.5	48.5	52.0	54.4	56.2	57.6	58.7	59.9	60.8	61.0	60.5	59.3	55.1	50.4	47.7	45.8	48.8
Helena, Mont.	44.9	44.0	42.8	41.8	40.5	39.1	38.1	37.3	38.7	40.6	43.2	46.4	49.0	52.0	53.8	55.0	56.7	58.0	57.0	56.8	55.7	53.1	50.4	48.6	46.7	47.2
Huron, S. Dak.	48.5	47.3	45.8	44.7	43.3	42.6	42.2	44.1	48.4	52.9	57.7	61.3	63.7	65.7	66.5	67.2	66.2	65.7	64.5	61.2	57.1	55.0	52.2	50.9	54.8
Independence, Cal.	55.5	54.1	53.1	52.3	50.1	49.0	47.1	47.2	46.3	48.0	51.7	56.9	60.2	61.9	63.0	63.5	63.7	64.3	64.5	61.3	59.0	57.5	55.6	54.1	52.6	56.3
Indianapolis, Ind.	51.1	49.9	48.6	47.8	47.2	46.2	46.6	48.5	51.5	54.7	57.9	59.4	71.1	72.0	72.6	72.7	72.4	71.4	70.0	68.1	66.7	65.7	64.7	64.2	63.5	66.3
Jacksonville, Fla.	62.9	62.4	61.8	61.4	61.1	60.8	61.1	62.2	63.9	65.2	67.4	69.5	70.5	71.2	72.0	72.6	72.4	71.4	70.2	69.8	67.7	65.8	63.9	62.0	60.6	63.6
Kansas City, Mo.	55.9	55.4	54.4	53.6	52.5	52.0	51.2	52.2	53.9	56.5	59.7	62.3	64.3	65.1	66.3	67.1	67.5	67.5	66.6	64.2	62.7	61.3	59.7	58.2	56.5	55.2	58.0
Key West, Fla.	72.4	72.2	72.0	72.1	72.0	72.0	72.5	73.6	74.2	75.0	75.7	75.9	76.2	76.0	76.0	75.7	75.4	74.8	73.9	73.2	73.0	73.0	72.8	72.7	73.8
Knoxville, Tenn.	55.0	54.0	52.9	52.0	51.1	50.5	50.4	52.7	54.7	57.3	60.2	62.7	64.4	65.7	66.3	66.4	66.1	65.6	64.3	62.5	60.6	59.4	57.8	56.6	58.7
Lander, Wyo.	42.6	40.6	39.2	37.7	36.0	34.7	33.9	32.9	36.3	42.2	47.3	50.8	53.1	55.3	56.6	57.5	58.5	59.3	59.8	58.4	56.4	52.3	48.2	46.8	44.8	46.7
Little Rock, Ark.	59.1	58.4	57.4	56.7	55.5	54.8	54.9	56.1	58.6	61.9	65.1	67.2	68.3	69.8	70.8	71.4	71.5	71.1	69.8	67.7	65.8	63.9	62.0	60.6	63.3
Louisville, Ky.	53.8	52.7	52.4	51.7	50.8	50.2	50.3	51.8	54.1	57.2	60.0	62.3	64.3	64.9	65.3	65.3	65.3	64.7	63.3	61.6	59.8	58.2	56.5	55.2	58.0
Lynchburg, Va.	51.1	50.4	48.9	48.2	47.4	47.0	48.2	51.5	54.6	57.4	59.6	61.5	62.9	64.2	64.4	64.2	63.2	62.1	60.6	58.9	56.9	55.3	53.8	52.7	56.0
Marquette, Mich.	38.8	38.7	38.6	38.4	37.8	37.6	38.0	39.4	40.3	41.6	43.0	43.0	43.1	43.4	43.2	43.0	43.3	42.9	42.0	41.0	40.1	39.4	39.2	39.1	40.6
Memphis, Tenn.	60.5	59.5	58.5	57.5	56.9	56.3	56.0	57.8	59.9	62.8	65.2	67.5	68.8	69.9	70.8	71.2	71.4	71.1	69.9	67.3	65.7	64.2	62.8	61.6	63.9
Milwaukee, Wis.	42.1	42.0	42.4	42.4	42.2	41.7	41.6	43.7	45.1	47.0	48.0	48.9	49.1	48.7	48.8	48.6	48.7	47.9	46.9	45.3	44.3	43.7	43.3	42.9	45.2
Montgomery, Ala.	60.8	60.2	59.2	58.2	57.4	56.9	56.9	58.3	60.8	63.1	66.0	68.0	69.9	71.2	72.1	72.7	72.5	71.9	70.3	68.4	66.7	65.1	63.3	62.1	64.7
Moorhead, Minn.	45.5	45.1	44.1	42.9	41.9	41.3	40.8	41.6	45.3	49.3	52.8	55.4	58.2	59.4	60.8	61.9	62.1	61.4	60.2	57.8	55.1	52.5	50.2	48.4	51.4
Nantucket, Mass.	40.4	40.3	40.2	40.0	40.3	41.1	41.9	43.2	43.7	44.2	44.6	45.2	45.1	45.1	44.3	44.0	43.6	42.7	42.2	42.1	41.6	41.6	41.2	41.0	42.5
Nashville, Tenn.	56.5	55.7	54.6	53.8	52.8	52.2	51.9	53.4	55.9	59.0	61.9	63.5	65.1	65.8	66.4	66.8	66.8	65.5	65.5	64.0	62.5	61.2	59.5	58.2	60.0
New Haven, Conn.	42.6	41.8	41.3	40.7	40.1	40.6	42.2	44.5	46.1	47.9	49.6	50.7	50.9	51.7	51.7	51.9	51.4	50.2	49.2	47.8	46.8	45.4	44.4	43.7	46.1
New Orleans, La.	68.6	68.3	67.8	67.6	67.4	67.4	67.1	68.2	69.2	71.2	72.6	73.2	72.9	72.6	73.2	73.4	73.6	73.2	72.0	70.6	68.5	67.1	65.9	64.9	64.3	67.3
New York, N. Y.	45.5	44.7	44.4	44.0	44.0	44.0	44.5	45.6	46.8	47.6	48.8	49.9	50.8	51.3	51.3	51.5	50.9	49.7	49.0	48.5	47.7	47.4	46.9	46.4	47.6
Norfolk, Va.	52.4	52.2	52.1	51.8	51.5	51.1	51.9	53.9	55.9	57.7	60.1	61.4	62.9	63.1	62.8	62.3	61.4	59.7	57.7	56.2	55.1	54.5	53.9	53.3	56.4
North Platte, Nebr.*	48.1	46.9	45.6	44.8	44.1	43.4	42.6	43.6	46.3	50.1	54.1	57.0	61.7	63.4	65.1	65.1	64.8	64.5	63.3	61.7	59.6	57.3	55.4	54.0	52.5	55.9
Omaha, Nebr.	54.4	53.4	52.4	51.3	50.1	49.4	48.8	49.4	51.1	54.4	57.1	59.5	60.8	62.0	63.3	64.5	64.8	64.5	63.3	61.7	59.6	57.3	55.4	54.0	52.5	55.8
Parkersburg, W. Va.	51.2	50.1	49.0	48.0	47.1	46.4	47.2	50.1	53.3	56.4	58.6	60.8	62.8	63.4	64.5	64.8	64.5	63.3	61.7	59.6	57.3	55.4	54.0	52.5	55.8
Philadelphia, Pa.	46.7	46.2	45.7	45.4	45.0	45.0	45.8	47.9	49.7	51.7	53.5	55.0	56.4	57.0	57.2	57.0	56.4	55.5	53.3	51.6	50.0	49.1	48.4	47.8	50.7
Pittsburg, Pa.	50.1	49.1	48.3	47.6	46.9	46.5	45.8	48.0	50.0	52.5	54.8	56.7	58.5	59.4	59.8	60.4	60.3	59.7	58.3	56.5	55.1	53.8	52.8	52.4	53.5
Portland, Oreg.	50.8	49.9	48.5	47.8	46.8	45.8	45.2	44.5	44.2	44.2	45.1	47.0	49.0	51.2	53.1	54.7	56.2	57.8	58.7	58.5	57.9	57.1	55.9	53.7	52.3	51.3
Rapid City, S. Dak.	44.7	44.0	42.5	41.6	41.9	42.0	40.7	41.8	44.7	48.3	51.8	54.5	56.8	58.4	59.8	60.4	60.3	59.4	58.1	56.8	55.1	54.5	51.7	49.0	47.2	50.8
Red Bluff, Cal.	57.0	55.0	53.2	51.8	51.1	50.3	49.7	49.3	49.1	51.2	54.2	57.0	59.7	62.1	64.2	66.2	67.4	67.8	68.0	68.0	66.0	62.5	60.2	58.1	58.3
Rochester, N. Y.	42.1	41.7	41.5	40.8	40.2	40.0	40.9	43.4	45.2	46.7	48.4	49.6	50.7	51.4	51.4	51.7	51.0	49.8	48.2	46.2	45.5	44.8	44.1	43.4	45.8
Roseburg, Oreg.	50.5	48.8	47.0	45.7	44.2	43.4	42.5	41.7	41.9	42.9	45.3	48.8	51.7	54.0	56.8	58.3	60.3	60.8	60.9	61.0	59.7	57.7	54.9	52.8	51.3
St. Louis, Mo.	56.4	55.6	54.9	54.1	53.3	52.4	52.2	53.3	55.1	57.6	60.3	62.8	64.5	66.0	66.9	67.1	66.3	65.6	64.5	62.7	62.7	62.4	61.3	60.0	58.8	57.8	59.6
St. Paul, Minn.	48.4	47.8	46.1	45.2	44.5	43.8	43.2	44.1	45.8	48.5	52.0	54.5	56.5	57.9	59.0	60.0	60.6	60.9	61.4	61.4	60.8	60.5	59.9	59.7	59.1	58.3	59.2	52.2	52.3	50.9	52.1
Salt Lake City, Utah.	49.3	48.4	47.8	46.4	46.0	45.5	44.0	43.6	44.7	47.6	51.9	54.8	56.5	57.8	59.0	59.6	59.8	59.7	59.1	58.3	56.9	54.6	52.3	50.9	52.3
San Diego, Cal.	54.7	53.9	53.8	53.2	53.1	52.4	52.0	52.0	51.7	58.7	55.9	57.9	60.1	57.1	61.6	62.6	62.8	63.1	62.8	62.2	61.3	59.7	57.9	56.7	55.8	57.1
San Francisco, Cal.	51.5	51.3	51.3	50.8	50.3	50.1	50.0	50.0	50.1	50.9	49.3	51.3	53.8	56.0	57.1	57.7	58.2	58.3	57.3	56.4	55.6	54.3	52.8	52.4	51.9	53.4
Santa Fe, N. Mex.	45.7	44.7	43.4	42.0	40.8	39.8	38.5	39.4	43.4	46.6	43.3	44.4	44.9	57.0	58.0	58.8	58.8	58.9	58.9	57.9	56.5	55.2	53.2	50.3	48.2	46.9	49.1
Sault Ste. Marie, Mich.	34.6	34.3	34.1	33.9	33.7	33.6	34.6	36.6	39.1	41.3	66.5	68.9	70.5	71.0	71.1	70.6	70.3	69.1	67.4	64.8	63.4	62.8	62.3	61.9	61.3	60.8	63.9
Savannah, Ga.	59.8	59.2	58.7	58.1	57.5	57.3	58.2	60.8	63.3	66.5															
Seattle, Wash.	47.9	46.9	46.4	45.7	45.3	44.8	44.3	43.8	43.3	44.4	45.7	47.3	49.3	50.0	52.0	53.1	54.2	54.8	54.6	54.6	53.1	51.6	50.4	49.1	48.9
Shreveport, La.	63.9	62.1	60.6	59.1	58.3	57.4	56.5	57.6	60.5	63.9	67.3	69.3	70.8	72.5	73.5	74.6	75.3	75.1	73.5	71.1	69.1	67.7	66.1	64.4	66.2
Spokane, Wash.	46.7	45.3	43.8	42.6	41.3	40.5	39.8	39.3	39.1	40.3	42.8	46.7	50.0	53.0	55.4	57.2	58.0	58.8	58.5	58.3	57.0	54.9	51.7	49.2	46.6
Titusville, Fla.	64.9	64.7	64.2	64.0	63.6	63.2	64.1	66.9	69.1	70.8	72.3	73.0	73.6	74.4	74.4	74.2	73.7	72.7	70.5	68.4	67.9	67.1	66.2	65.6	68.7
Toledo, Ohio	45.6	44.7	44.4	43.6	42.9	42.8	42.9	45.0	46.3	48.6	50.9	53.5	54.4	55.2	55.4	55.7	55.9	54.5	53.1	51.2	50.1	49.1	48.1	47.1	49.2
Tucson, Ariz.	63.3	60.3	57.1	54.8	52.8	51.2	49.7	48.4	50.4	57.0	65.5	71.5	74.9	77.3	79.3	80.7	81.5	81.6	80.5	78.9	74.2	70.7	68.3	66.3	66.5
Vicksburg, Miss.	63.5	62.6	61.5	60.5	59.5	59.1	58.5	59.5	61.7	64.5	67.1	69.1	71.0	72.3	73.3	73.8	73.8	73.2	72.0	69.7	68.5	66.9	65.9	64.8	66.3
Washington, D. C.	49.1	48.4	47.7	47.2	46.6	46.2	47.6	50.1	52.5	54.6	56.6	58.5	59.8	60.8	61.1	60.9	60.2	59.0	57.4	55.9	54.2	53.0	52.1	50.7	53.8
Williston, N. Dak.	46.1	44.8	43.5	42.2	41.0	40.8	40.2	39.1	38.7	40.9	45.2	49.4	53.0	55.9	57.8	59.6	61.0	61.4	60.2	58.9	55.4	52.1	49.5	47.3	50.2
Wilmington, N. C.	56.0	55.7	55.1	54.2	54.5	54.4	55.7	58.1	60.2	62.0	63.6	65.0	65.2	65.4	65.1	64.4	63.2	62.1	60.2	59.9	59.3	58.4	57.6	57.2	56.6	59.6
Winnemucca, Nev.	45.5	44.4	42.5	41.0	40.3	38.6	36.9	35.4	35.0	39.3	44.7	49.5	53.2	55.8	57.7	59.4	60.6	61.1	61.2	60.3	58.8	55.0	51.7	48.5	49.0
Yuma, Ariz.	65.3	63.5	62.3	60.3	58.3	57.1	56.3	55.8	58.1	63.6	69.7	74.7	78.3	80.9	82.9	84.4	85.4	85.5	85.2	83.5	79.7	74.9	70.7	67.7	71.0

* Record for twenty-one days.

TABLE V.—*Mean pressure for each hour of seventy-fifth meridian time, April, 1895.*

Stations.	1 a. m.	2 a. m.	3 a. m.	4 a. m.	5 a. m.	6 a. m.	7 a. m.	8 a. m.	9 a. m.	10 a. m.	11 a. m.	Noon.	1 p. m.	2 p. m.	3 p. m.	4 p. m.	5 p. m.	6 p. m.	7 p. m.	8 p. m.	9 p. m.	10 p. m.	11 p. m.	Midnight.	Mean.
Abilene, Tex.	28.182	.181	.177	.173	.173	.179	.188	.201	.210	.213	.211	.210	.194	.173	.149	.124	.108	.097	.104	.115	.128	.148	.166	.173	.165
Albany, N. Y.	29.950	.945	.940	.939	.944	.956	.965	.969	.969	.964	.955	.943	.931	.918	.908	.905	.910	.916	.927	.943	.953	.955	.959	.961	.944
Alpena, Mich	29.383	.377	.374	.370	.375	.386	.396	.397	.395	.389	.381	.378	.369	.369	.362	.356	.360	.365	.369	.376	.385	.394	.398	.396	.379
Atlanta, Ga.	28.827	.834	.821	.820	.824	.834	.853	.862	.869	.871	.872	.860	.849	.834	.813	.797	.791	.792	.800	.810	.826	.830	.833	.834	.831
Augusta, Ga	29.834	.838	.822	.821	.825	.835	.850	.856	.869	.862	.855	.844	.825	.810	.792	.782	.781	.783	.792	.807	.823	.830	.835	.837	.825
Baltimore, Md.	29.827	.822	.819	.817	.823	.832	.840	.842	.844	.840	.831	.817	.807	.795	.784	.783	.784	.788	.796	.814	.825	.830	.833	.832	.818
Bismarck, N. Dak.	28.302	.300	.304	.305	.308	.314	.322	.327	.331	.326	.325	.321	.308	.198	.183	.174	.166	.158	.160	.162	.172	.181	.187	.191	.197
Boston, Mass	29.895	.892	.887	.888	.897	.904	.914	.915	.918	.917	.910	.903	.893	.884	.880	.879	.884	.888	.901	.910	.912	.913	.912	.911	.900
Buffalo, N. Y.	29.372	.364	.359	.357	.362	.373	.384	.387	.387	.382	.388	.381	.376	.369	.358	.354	.358	.362	.367	.378	.388	.387	.388	.387	.374
Charleston, S. C	30.002	.995	.990	.988	.985	.996	.007	.012	.019	.024	.020	.010	.001	.988	.974	.961	.961	.966	.976	.987	.997	.002	.004	.004	.994
Chicago, Ill	29.118	.111	.108	.106	.107	.114	.126	.132	.130	.136	.136	.131	.125	.120	.108	.102	.100	.101	.105	.114	.125	.129	.128	.131	.118
Cincinnati, Ohio	29.318	.317	.317	.315	.320	.331	.346	.356	.357	.358	.354	.344	.332	.318	.299	.292	.290	.289	.291	.301	.313	.318	.326	.330	.322
Cleveland, Ohio	29.204	.195	.195	.198	.203	.216	.233	.235	.237	.237	.233	.221	.212	.200	.192	.186	.186	.188	.195	.205	.207	.210	.210	.213	.209
Columbus, Ohio	29.124	.120	.121	.119	.126	.135	.147	.154	.158	.159	.154	.144	.134	.123	.106	.098	.100	.101	.110	.118	.127	.131	.133	.136	.128
Denver, Colo.	24.742	.742	.734	.736	.734	.723	.736	.733	.742	.746	.749	.751	.745	.732	.725	.715	.701	.700	.701	.702	.709	.723	.732	.735	.727
Des Moines, Iowa	29.054	.052	.046	.048	.051	.057	.066	.078	.081	.082	.083	.078	.068	.047	.035	.024	.020	.018	.018	.021	.029	.042	.048	.051	.049
Detroit, Mich	29.227	.223	.220	.219	.223	.232	.244	.251	.251	.251	.249	.243	.233	.222	.211	.206	.206	.208	.212	.221	.237	.242	.241	.241	.230
Dodge City, Kans.	27.334	.334	.328	.326	.324	.326	.333	.343	.349	.348	.348	.346	.337	.332	.312	.294	.286	.284	.283	.283	.295	.315	.323	.326	.321
Duluth, Minn	29.252	.254	.251	.250	.253	.263	.272	.284	.290	.293	.290	.285	.273	.261	.251	.243	.239	.238	.236	.236	.244	.250	.251	.253	.259
Eastport, Me	29.930	.919	.917	.920	.927	.937	.944	.947	.950	.949	.942	.932	.921	.914	.909	.907	.907	.910	.925	.934	.940	.943	.944	.942	.929
El Paso, Tex.	26.171	.175	.174	.174	.176	.177	.187	.200	.215	.221	.223	.218	.205	.184	.167	.144	.126	.112	.105	.104	.114	.133	.150	.160	.167
Fort Canby, Wash.	29.873	.872	.869	.866	.862	.857	.850	.849	.849	.859	.866	.874	.880	.882	.884	.884	.879	.874	.871	.867	.862	.863	.869	.874	.868
Galveston, Tex.	29.990	.984	.980	.981	.980	.987	.000	.017	.017	.026	.031	.033	.025	.008	.990	.973	.961	.957	.958	.964	.975	.984	.990	.991	.992
Grand Haven, Mich	29.310	.311	.310	.309	.311	.318	.329	.338	.338	.339	.333	.324	.317	.309	.300	.295	.292	.294	.298	.303	.312	.317	.318	.320	.314
Havre, Mont.	27.341	.345	.346	.342	.342	.345	.349	.358	.367	.368	.369	.370	.358	.345	.333	.321	.308	.300	.294	.296	.299	.313	.328	.331	.336
Helena, Mont.	25.842	.844	.844	.843	.845	.850	.855	.859	.871	.872	.872	.867	.860	.842	.830	.821	.808	.802	.797	.803	.806	.817	.830	.833	.838
Huron, S. Dak	28.545	.546	.542	.546	.547	.548	.559	.570	.569	.568	.565	.558	.545	.533	.523	.510	.499	.499	.497	.498	.509	.521	.526	.533	.536
Independence, Cal.	26.097	.031	.034	.033	.029	.027	.028	.034	.044	.054	.062	.078	.069	.055	.037	.016	.998	.981	.970	.963	.966	.973	.990	.008	.022
Indianapolis, Ind.	29.159	.155	.156	.157	.162	.170	.184	.195	.196	.195	.187	.177	.167	.158	.144	.136	.135	.136	.143	.149	.162	.167	.166	.168	.164
Jacksonville, Fla.	29.991	.979	.973	.970	.978	.989	.006	.010	.014	.017	.010	.000	.986	.973	.949	.940	.940	.942	.958	.971	.991	.995	.001	.998	.982
Kansas City, Mo.	28.941	.937	.930	.929	.927	.931	.945	.958	.965	.970	.972	.969	.958	.945	.935	.921	.911	.908	.908	.911	.919	.934	.942	.944	.938
Key West, Fla	30.036	.025	.016	.013	.015	.025	.039	.049	.058	.061	.056	.049	.041	.026	.008	.995	.994	.998	.008	.025	.038	.046	.051	.046	.030
Knoxville, Tenn.	28.973	.971	.969	.969	.971	.979	.992	.004	.007	.009	.007	.996	.982	.968	.950	.934	.931	.929	.937	.949	.961	.969	.975	.978	.971
Little Rock, Ark.	29.643	.635	.627	.629	.634	.640	.658	.673	.680	.688	.689	.680	.664	.652	.632	.618	.609	.611	.609	.615	.629	.642	.645	.646	.644
Louisville, Ky.	29.421	.417	.413	.411	.414	.421	.438	.447	.452	.452	.454	.446	.433	.422	.406	.396	.390	.390	.394	.402	.415	.424	.427	.429	.421
Lynchburg, Va.	29.283	.278	.281	.282	.291	.304	.312	.313	.312	.310	.295	.280	.268	.250	.235	.232	.235	.239	.250	.263	.274	.279	.283	.287	.275
Marquette, Mich.	29.240	.237	.233	.232	.234	.238	.248	.256	.255	.259	.263	.268	.263	.260	.256	.251	.250	.250	.252	.256	.261	.261	.256	.254	.251
Memphis, Tenn	29.635	.632	.630	.628	.628	.635	.650	.659	.667	.674	.676	.672	.663	.651	.633	.620	.611	.607	.610	.616	.628	.634	.640	.641	.639
Milwaukee, Wis.	29.284	.282	.280	.280	.284	.289	.300	.306	.310	.314	.313	.308	.301	.294	.286	.277	.274	.274	.274	.280	.289	.288	.286	.290	.290
Moorhead, Minn.	28.961	.965	.964	.965	.970	.976	.985	.990	.990	.984	.984	.973	.963	.951	.938	.927	.918	.915	.914	.916	.925	.938	.945	.950	.954
Nantucket, Mass.	30.068	.023	.021	.020	.021	.031	.041	.041	.048	.045	.040	.035	.031	.026	.023	.024	.023	.027	.034	.040	.044	.044	.043	.040	.033
Nashville, Tenn	29.403	.399	.396	.398	.402	.412	.424	.428	.434	.438	.435	.424	.409	.396	.377	.370	.367	.366	.371	.382	.395	.401	.405	.409	.402
New Haven, Conn.	29.916	.907	.905	.904	.912	.923	.930	.933	.934	.931	.922	.913	.907	.898	.887	.886	.890	.894	.905	.920	.925	.928	.929	.929	.914
New Orleans, La.	29.961	.954	.950	.949	.951	.963	.975	.983	.986	.992	.998	.990	.977	.961	.943	.928	.920	.920	.926	.935	.951	.962	.968	.967	.960
New York, N. Y.	29.696	.691	.687	.685	.690	.698	.710	.718	.714	.714	.709	.702	.691	.681	.670	.671	.681	.682	.688	.699	.708	.710	.711	.707	.696
Norfolk, Va.	29.955	.947	.942	.944	.951	.962	.977	.981	.988	.988	.978	.968	.956	.944	.929	.924	.927	.932	.941	.953	.962	.965	.965	.964	.956
Omaha, Nebr.	28.775	.776	.771	.771	.773	.777	.785	.794	.798	.797	.794	.788	.775	.762	.750	.739	.728	.727	.729	.734	.750	.762	.770	.773	.767
Parkersburg, W. Va	29.331	.329	.327	.329	.334	.345	.357	.364	.369	.371	.364	.354	.342	.331	.311	.301	.300	.301	.305	.316	.326	.329	.336	.338	.334
Philadelphia, Pa.	29.912	.906	.904	.905	.908	.917	.926	.926	.927	.927	.922	.912	.903	.892	.882	.878	.881	.883	.891	.903	.920	.922	.924	.922	.908
Pittsburg, Pa	29.108	.106	.103	.104	.108	.113	.124	.137	.137	.136	.131	.124	.113	.101	.088	.082	.082	.086	.090	.102	.112	.116	.117	.119	.110
Portland, Oreg.	29.910	.913	.913	.911	.909	.906	.905	.908	.918	.923	.926	.927	.927	.924	.913	.906	.896	.889	.889	.896	.885	.887	.901	.908	.907
Rochester, N. Y.	29.457	.454	.449	.447	.450	.459	.469	.472	.474	.475	.473	.470	.461	.454	.444	.442	.446	.452	.460	.471	.475	.477	.474	.472	.462
Roseburg, Oreg.	29.496	.496	.499	.502	.503	.502	.502	.506	.511	.515	.521	.521	.518	.511	.499	.491	.481	.474	.468	.465	.459	.463	.477	.487	.494
St. Louis, Mo	29.371	.365	.361	.360	.361	.369	.381	.391	.392	.395	.395	.385	.374	.362	.349	.337	.335	.339	.345	.354	.367	.375	.378	.379	.367
St. Paul, Minn	29.077	.080	.079	.085	.088	.095	.106	.117	.119	.119	.114	.110	.096	.084	.073	.062	.048	.051	.047	.052	.062	.070	.072	.073	.082
Salt Lake City, Utah	25.647	.650	.648	.648	.652	.655	.658	.668	.678	.683	.682	.683	.671	.662	.650	.644	.631	.629	.622	.621	.620	.627	.631	.637	.650
San Diego, Cal.	29.974	.972	.969	.958	.949	.945	.942	.943	.960	.969	.975	.980	.981	.975	.969	.958	.946	.941	.937	.936	.940	.949	.962	.967	.958
San Francisco Cal.	29.967	.966	.965	.962	.956	.952	.950	.954	.968	.982	.987	.991	.993	.990	.981	.972	.961	.952	.947	.940	.937	.940	.952	.962	.964
San L. Obispo, Cal.	29.862	.863	.862	.858	.849	.842	.842	.846	.854	.863	.867	.870	.871	.865	.857	.851	.841	.833	.832	.829	.831	.836	.850	.856	.851
Santa Fe, N. Mex.	23.267	.267	.267	.264	.263	.263	.266	.270	.279	.283	.287	.290	.284	.274	.263	.255	.237	.229	.225	.225	.231	.242	.252	.262	.260
S'lt Ste. Marie, Mich	29.348	.346	.342	.342	.347	.355	.365	.370	.368	.365	.362	.356	.351	.347	.340	.334	.336	.340	.345	.350	.358	.360	.361	.359	.352
Savannah, Ga.	29.925	.920	.918	.919	.926	.935	.946	.953	.959	.961	.955	.944	.928	.913	.899	.883	.880	.885	.898	.907	.920	.928	.930	.928	.923
Seattle, Wash	29.928	.927	.931	.928	.927	.926	.925	.924	.930	.937	.939	.938	.938	.937	.930	.923	.916	.909	.904	.899	.900	.908	.914	.923	.923
Spokane, Wash.	28.006	.010	.013	.009	.012	.011	.013	.019	.031	.033	.033	.035	.035	.027	.014	.008	.999	.989	.982	.980	.974	.980	.994	.994	.008
Tatoosh Isl'd, Wash	29.937	.935	.935	.934	.933	.930	.928	.925	.926	.932	.936	.941	.953	.956	.958	.959	.957	.949	.942	.938	.933	.930	.931	.935	.939
Toledo, Ohio.	29.284	.281	.280	.279	.285	.297	.310	.317	.318	.317	.314	.302	.291	.281	.268	.263	.260	.263	.267	.276	.290	.292	.295	.297	.289
Vicksburg, Miss	29.711	.708	.702	.700	.708	.712	.724	.739	.747	.752	.755	.753	.741	.727	.709	.691	.677	.673	.675	.677	.689	.702	.709	.711	.712
Washington, D. C.	29.917	.913	.910	.909	.910	.918	.926	.929	.932	.937	.929	.918	.909	.897	.885	.881	.881	.883	.890	.904	.916	.920	.920	.921	.911
Wilmington, N. C.	29.932	.927	.924	.925	.932	.943	.951	.953	.956	.959	.950	.936	.929	.918	.909	.906	.907	.911	.923	.940	.943	.945	.943	.942	.933
Yuma, Ariz	29.781	.785	.785	.783	.783	.784	.788	.798	.816	.826	.832	.832	.825	.814	.794	.775	.751	.735	.733	.722	.723	.736	.756	.769	.780

TABLE VI.—*Average wind movement for each hour of seventy-fifth meridian time, April, 1895.*

Stations.	1 a. m.	2 a. m.	3 a. m.	4 a. m.	5 a. m.	6 a. m.	7 a. m.	8 a. m.	9 a. m.	10 a. m.	11 a. m.	Noon.	1 p. m.	2 p. m.	3 p. m.	4 p. m.	5 p. m.	6 p. m.	7 p. m.	8 p. m.	9 p. m.	10 p. m.	11 p. m.	Midnight.	Mean.
Abilene, Tex.	10.4	11.7	10.9	10.7	11.1	10.6	10.6	10.6	12.1	13.2	14.9	14.4	14.6	14.7	14.6	14.5	14.4	14.2	14.4	13.8	11.6	10.8	11.0	11.5	12.6
Albany, N. Y.	6.7	6.7	6.3	6.3	6.4	6.3	7.0	8.4	9.2	9.8	10.1	9.9	10.2	11.1	11.4	11.2	11.1	11.3	9.8	9.0	9.2	8.1	7.3	7.5	8.8
Alpena, Mich.	7.0	6.9	6.9	6.8	6.7	6.9	7.4	8.5	9.4	9.8	10.7	11.3	11.9	11.8	11.8	11.8	10.7	10.0	9.0	7.7	7.7	7.5	8.0	7.6	8.9
Amarillo, Tex.	20.5	19.4	19.5	19.8	19.4	17.8	17.4	17.0	18.9	21.8	21.5	21.3	22.1	22.8	24.1	24.3	23.7	24.2	25.4	23.4	21.7	20.3	20.3	21.6	21.2
Atlanta, Ga.	10.0	10.4	10.6	10.6	9.7	9.5	9.3	8.9	9.8	10.7	9.8	10.4	10.9	11.0	11.3	12.4	11.6	10.7	9.6	9.1	9.3	9.4	10.0	10.8	10.2
Augusta, Ga.	5.9	5.6	5.1	4.4	4.3	4.2	4.3	4.1	5.1	5.8	6.1	6.2	7.4	7.4	8.0	7.9	7.7	8.0	8.8	9.0	9.3	6.0	5.8	6.1	6.2	6.0
Baker City, Oreg.	5.1	6.2	5.3	5.4	6.0	5.7	5.6	6.5	5.6	6.3	6.7	6.1	6.6	8.2	8.5	9.1	10.7	10.0	8.5	7.7	8.2	7.2	6.3	5.1	6.9
Baltimore, Md.	7.3	7.3	7.3	6.6	6.1	6.5	7.1	8.5	9.3	9.8	10.0	10.2	10.6	10.7	11.2	10.6	10.7	10.0	8.9	8.0	7.4	7.6	7.8	7.4	8.6
Bismarck, N. Dak.	7.6	7.9	7.9	8.5	7.7	8.3	8.3	14.8	9.9	11.5	12.5	13.5	14.3	15.6	15.9	15.8	15.4	14.8	14.2	13.5	10.1	12.5	18.3	13.7	11.2
Block Island, R. I.	12.9	12.9	12.8	12.3	13.3	14.0	14.9	14.9	14.5	13.5	13.6	14.2	14.9	15.4	15.4	14.9	15.6	14.8	14.2	13.9	13.1	12.5	18.3	18.3	14.0
Boston, Mass.	9.1	8.6	8.8	9.4	9.8	9.9	10.9	10.3	11.0	11.0	11.8	12.2	13.0	13.1	13.6	13.6	12.6	11.7	10.5	9.7	10.0	9.5	9.1	9.2	10.8
Buffalo, N. Y.	7.2	7.2	7.1	7.0	7.4	7.2	7.1	8.0	8.9	8.7	9.5	10.4	10.6	10.4	10.1	10.1	10.0	9.9	9.3	9.2	8.6	7.8	6.9	7.1	8.6
Cairo, Ill.	7.9	7.0	7.3	7.3	7.4	7.0	7.3	7.2	8.6	8.7	10.3	10.7	11.1	11.8	12.5	12.3	12.4	12.2	9.9	9.2	8.5	8.0	8.2	7.4	9.1
Cape Henry, Va.	12.9	13.5	13.5	14.6	15.3	15.2	14.7	15.3	15.2	14.9	14.8	15.1	15.8	15.7	15.2	15.1	13.7	12.9	11.4	11.8	12.5	12.8	13.9	14.0	14.2
Charleston, S. C.	8.0	7.7	7.8	7.2	7.3	7.5	7.3	7.1	7.5	8.8	10.4	10.4	10.8	11.3	11.5	12.5	12.1	11.4	9.5	8.3	7.3	6.9	7.1	7.4	8.9
Charlotte, N. C.	6.2	6.7	6.8	6.5	6.2	6.3	5.9	6.8	7.4	8.1	8.2	8.6	8.9	9.2	9.5	9.7	9.7	9.9	8.8	8.6	8.7	8.1	7.3	6.8	7.9
Chattanooga, Tenn.	6.6	6.3	6.7	5.4	5.7	4.8	5.2	5.3	6.7	7.8	8.0	9.1	10.3	10.8	10.9	10.9	9.7	9.9	7.9	7.9	7.6	7.3	6.5	6.0	7.9
Cheyenne, Wyo.	10.0	10.0	11.1	10.6	10.3	10.2	9.9	11.1	11.0	12.0	13.0	13.0	12.2	12.2	12.2	12.6	11.8	11.4	9.3	8.6	7.9	7.8	7.3	9.9	11.2
Chicago, Ill.	10.2	17.1	16.6	17.0	17.0	17.7	17.9	17.9	18.2	18.6	18.3	18.8	18.8	19.2	20.0	20.2	19.6	19.6	19.4	18.0	17.6	18.0	18.5	17.9	17.5
Cincinnati, Ohio.	17.0	13.5	13.5	14.6	15.3	15.2	14.7	15.3	14.9	14.9	14.8	15.1	15.8	15.7	15.2	15.1	13.7	12.9	12.4	12.8	11.1	9.9	8.7	9.3	18.3
Cleveland, Ohio.	5.5	5.5	5.0	5.3	7.5	7.5	7.3	7.1	7.5	8.8	10.4	10.8	10.7	11.3	11.5	12.5	12.1	11.4	9.5	8.3	7.3	6.5	6.3	5.9	7.8
Columbia, Mo.	10.8	10.8	11.3	11.0	11.0	11.0	10.7	10.3	8.0	8.6	9.7	10.4	10.7	10.8	10.8	10.5	9.7	9.1	8.6	8.5	8.6	8.9	8.9	8.5	9.4	10.7
Columbus, Ohio.	7.2	7.0	6.8	6.7	6.7	6.6	6.7	7.2	7.2	8.4	9.7	10.3	10.6	11.2	11.5	11.5	10.5	10.1	9.6	8.6	8.1	8.2	8.3	8.2	8.1	8.5
Concordia, Kans.	6.5	6.1	6.1	5.9	5.8	6.2	6.2	6.9	7.1	8.0	8.6	9.1	10.1	10.6	10.6	10.3	10.3	9.8	8.8	8.0	7.2	7.2	8.1	8.9	9.3	9.2
Corpus Christi, Tex.	8.9	9.7	8.8	8.3	7.6	7.7	7.7	7.7	8.4	9.7	10.3	10.6	11.1	11.6	12.1	12.2	12.8	12.3	11.5	11.1	9.7	9.3	8.8	8.9	9.3	10.3
Davenport, Iowa.	12.2	11.6	10.1	10.3	10.6	10.2	9.6	9.9	10.6	12.1	12.8	13.1	14.1	15.1	15.9	17.0	17.1	17.5	17.2	16.0	15.2	13.7	13.9	13.9	14.2	15.5
Denver, Colo.	9.5	10.0	9.5	7.9	7.4	8.2	8.4	8.7	9.5	10.9	12.5	12.7	13.7	14.0	13.9	14.0	14.0	13.4	12.1	10.5	8.9	8.5	9.4	10.7	11.7
Des Moines, Iowa.	8.3	7.7	8.0	8.2	8.1	7.9	8.5	7.8	7.1	8.7	6.5	6.6	8.2	9.4	10.0	10.2	10.1	10.5	11.1	10.4	8.5	8.6	8.3	8.2	8.1	11.3
Detroit, Mich.	8.2	6.9	6.2	6.4	6.2	6.6	6.5	6.8	7.7	10.4	11.3	10.3	12.3	13.1	13.4	13.2	12.3	11.8	11.4	9.7	8.4	8.1	8.2	8.1	9.2	9.2
Dodge City, Kans.	9.4	9.1	9.3	8.7	8.6	8.4	8.7	9.0	10.0	10.7	11.7	12.1	12.7	13.1	12.8	12.8	12.2	11.9	10.3	9.7	10.1	9.3	8.9	9.3	9.3	10.3
Duluth, Minn.	13.4	13.5	13.8	13.8	13.7	12.4	11.9	12.3	13.4	16.4	17.6	18.1	17.6	17.8	18.2	18.6	19.1	18.0	17.9	17.6	14.8	13.9	13.9	13.9	14.2	15.5
Eastport, Me.	9.4	9.1	10.0	10.6	10.2	10.3	9.8	11.0	11.6	12.0	12.3	12.6	13.2	13.5	13.7	13.9	14.1	14.3	14.3	13.2	11.4	10.1	9.5	10.1	9.9	11.7
El Paso, Tex.	10.1	9.9	10.1	9.6	9.5	9.6	9.9	10.9	11.3	11.5	12.0	12.5	12.9	12.6	13.3	14.1	14.3	13.1	11.7	11.1	10.9	11.3	11.4	10.3	10.3	11.3
Erie, Pa.	13.3	12.9	13.1	13.7	12.6	12.5	12.3	11.6	11.8	12.3	11.7	14.7	14.8	15.5	15.5	16.8	17.1	17.7	17.8	16.8	16.0	13.6	11.6	11.3	12.0	14.1
Eureka, Cal.	9.7	9.8	9.3	9.7	9.8	9.6	9.6	10.3	10.2	10.7	11.7	12.0	12.3	12.6	12.8	12.5	11.5	11.0	10.2	9.9	9.4	9.2	8.8	8.4	9.2	10.4
Fort Canby, Wash.	6.1	5.7	5.3	5.3	5.2	5.3	5.3	5.0	5.0	5.0	4.8	5.2	6.1	6.6	7.8	8.9	10.1	10.5	11.4	10.7	10.4	9.1	7.7	6.6	6.1	7.1
Fort Smith, Ark.	17.3	15.6	13.9	13.1	11.6	12.0	13.2	13.7	14.5	14.4	14.2	13.3	13.9	15.3	17.0	18.2	18.2	20.0	19.5	21.0	20.8	20.3	19.2	17.9	16.2
Fresno, Cal.	6.1	5.7	6.1	6.5	7.0	6.0	5.7	6.5	5.5	7.7	5.8	7.8	8.2	8.8	10.2	10.0	9.3	9.3	7.4	7.7	7.0	6.3	7.8	7.0	7.5
Galveston, Tex.	7.5	7.1	6.8	6.8	5.8	6.0	6.0	5.0	9.3	10.1	10.9	10.7	11.5	12.2	12.9	13.1	11.7	12.3	12.0	12.7	8.6	7.8	7.4	7.8	6.6
Grand Haven, Mich.	10.9	10.6	10.2	10.2	9.7	8.9	9.0	9.0	8.3	10.0	10.6	11.6	12.6	13.5	13.4	11.2	11.7	12.3	12.0	12.3	10.6	10.6	10.6	10.8	10.7
Green Bay, Wis.	7.9	7.7	7.7	8.2	8.2	8.2	7.9	7.8	7.8	8.5	9.3	9.6	10.6	11.4	11.7	12.0	11.5	11.5	10.6	9.4	8.4	6.8	7.0	6.4	6.8	8.7
Hannibal, Mo.	6.2	6.7	6.6	7.3	7.7	7.8	7.8	7.8	7.9	9.1	10.0	11.1	11.8	11.7	12.0	11.0	12.6	13.1	12.6	10.3	8.9	8.4	9.3	8.7	8.2	9.8
Harrisburg, Pa.	8.7	8.5	9.1	8.8	8.3	7.8	7.3	7.5	8.1	8.6	9.9	10.0	10.9	10.5	11.1	11.0	11.1	11.6	10.6	9.1	8.5	7.9	7.6	7.3	7.1	8.6
Hatteras, N. C.	6.5	6.3	6.6	6.7	6.7	7.3	7.3	7.2	8.1	8.6	9.9	10.6	11.0	11.6	11.1	11.0	10.2	10.2	10.6	10.2	9.5	8.5	7.9	7.3	7.1	8.6
Havre, Mont.	11.5	12.6	13.1	13.1	13.9	13.6	13.6	13.6	13.7	14.3	13.6	13.6	14.0	14.3	15.2	15.4	15.0	15.2	14.5	13.4	13.0	12.1	12.1	11.3	12.0	13.6
Helena, Mont.	7.3	7.7	7.8	6.9	6.5	7.2	6.7	6.8	7.3	9.9	11.7	12.9	13.4	14.5	15.4	15.4	15.0	15.3	14.4	14.4	14.0	10.8	7.9	6.3	6.4	10.3
Huron, S. Dak.	8.9	9.2	9.5	8.6	7.8	7.4	7.9	7.8	8.6	9.3	10.2	10.6	11.2	11.6	12.0	12.1	11.5	12.1	11.1	10.5	10.4	10.2	9.5	8.5	8.4	8.6
Idaho Falls, Idaho.	15.2	14.7	14.0	13.3	12.5	12.1	11.6	11.2	11.2	12.0	13.2	13.7	14.3	15.2	15.2	15.2	14.3	13.4	12.9	12.0	10.8	10.2	9.4	9.3	9.4	10.8
Independence, Cal.	6.6	7.5	6.7	6.0	5.8	5.1	5.5	5.6	5.7	6.3	7.1	9.2	10.2	10.8	9.9	9.1	9.1	8.9	8.8	8.2	7.6	7.9	7.9	8.5	8.4	9.6
Indianapolis, Ind.	8.7	8.4	8.2	8.4	7.8	7.6	7.4	7.2	7.2	7.7	7.7	8.3	8.3	8.4	9.1	9.1	8.9	8.8	8.2	7.4	7.6	7.0	7.6	7.3	7.1	8.0
Jacksonville, Fla.	5.5	5.7	5.7	5.6	5.3	5.6	5.9	6.3	6.3	7.7	7.7	8.3	9.8	10.3	10.4	10.3	10.2	10.0	11.4	11.3	11.5	12.1	11.5	11.2	11.4	11.5
Jupiter, Fla.	6.5	6.5	6.1	6.5	7.3	7.5	7.3	7.0	7.1	8.2	9.9	10.8	10.8	11.5	12.1	11.1	10.5	10.4	9.0	7.8	10.2	12.5	12.4	12.2	14.7
Kansas City, Mo.	9.1	8.9	8.6	8.2	8.0	8.0	7.7	7.8	9.1	11.4	12.8	12.6	13.7	13.9	13.4	13.2	14.3	13.4	12.4	12.4	12.7	12.5	12.4	4.7	4.0
Keokuk, Iowa.	8.1	7.7	7.5	7.7	7.7	6.4	6.3	6.3	9.5	10.2	11.3	9.7	9.8	12.4	12.5	12.7	12.3	11.9	11.7	10.6	10.8	4.9	7.0	6.8	5.7	7.6
Key West, Fla.	6.7	6.4	6.7	6.3	6.3	10.7	10.3	10.3	11.4	12.1	11.9	12.5	12.5	12.5	12.3	12.5	10.7	10.2	9.3	8.6	7.0	6.1	5.3	4.0	5.1
Kittyhawk, N. C.	10.8	10.6	10.7	10.3	10.8	13.7	14.6	15.8	16.0	15.6	15.6	15.6	16.1	17.7	18.0	17.2	17.0	16.5	15.7	14.0	12.7	12.5	12.4	12.2	14.7
Knoxville, Tenn.	12.3	13.3	13.5	13.6	13.9	14.0	13.7	14.6	15.8	16.0	15.8	15.6	15.6	16.1	17.7	18.0	17.2	17.0	16.5	15.7	14.0	12.7	12.5	12.4	12.2	14.7
La Crosse, Wis.	4.2	4.2	3.6	3.6	3.7	3.9	3.6	4.4	5.2	5.6	5.8	5.6	6.3	7.9	8.3	8.6	8.6	8.3	6.7	5.2	4.6	4.9	4.7	4.0	5.6
Lander, Wyo.	5.7	5.6	6.2	5.6	5.5	5.0	5.2	5.2	6.3	6.3	8.0	9.2	9.3	10.1	10.6	10.0	10.7	10.0	9.9	8.5	7.3	7.0	6.8	5.7	6.1	7.6
Lexington, Ky.	3.8	4.0	4.2	4.5	3.6	3.0	2.9	2.9	2.9	3.1	3.1	4.5	5.0	5.6	6.6	7.1	8.4	7.9	7.9	7.4	5.8	5.8	6.1	5.3	4.0	5.1
Little Rock, Ark.	10.4	11.3	10.9	10.4	10.4	10.5	10.0	10.0	10.8	11.6	12.5	12.5	13.3	13.9	13.9	13.9	13.4	13.1	12.1	10.5	10.4	10.2	10.2	10.7	10.3	11.5
Los Angeles, Cal.	6.1	5.6	5.7	5.9	6.0	6.2	6.0	5.8	7.2	8.4	9.6	9.8	10.6	10.2	10.0	9.8	10.6	10.5	8.9	7.4	6.9	6.1	6.0	5.8	6.3	7.6
Louisville, Ky.	2.6	2.5	2.4	2.4	2.5	2.1	2.1	2.0	2.0	2.1	3.0	3.0	3.3	4.1	5.4	6.0	7.1	7.4	7.4	6.8	6.8	5.4	3.6	3.0	2.7	3.8
Lynchburg, Va.	7.2	7.2	6.9	6.5	6.9	6.4	6.6	7.5	8.5	9.6	10.0	10.0	11.0	11.6	11.7	11.5	11.7	11.5	10.7	10.2	10.4	7.9	7.7	7.5	7.3	8.8
Marquette, Mich.	4.0	3.9	4.1	3.7	3.5	3.1	3.3	4.6	5.8	6.2	6.6	6.7	7.8	8.4	8.0	8.4	8.0	8.0	7.4	5.8	6.7	4.2	4.1	4.3	4.2	5.5
Memphis, Tenn.	7.7	8.1	7.9	8.0	7.6	7.7	7.6	7.7	8.0	8.5	9.3	9.6	10.4	10.9	10.1	9.7	9.1	8.2	8.5	7.7	6.7	6.8	6.6	7.7	7.9	8.3
Meridian, Miss.	8.2	7.9	7.2	6.6	6.6	6.9	6.9	6.8	7.4	8.1	8.1	8.4	9.3	9.6	9.9	9.6	9.6	9.3	9.2	8.1	7.2	5.6	5.7	6.1	6.3	7.3
Miles City, Mont.	4.6	3.9	4.0	3.4	3.3	3.6	3.6	6.7	6.5	7.1	7.7	8.0	9.0	9.2	9.2	9.2	9.2	9.8	8.9	7.4	6.9	5.1	4.6	4.3	4.6	4.5
Milwaukee, Wis.	8.1	8.3	7.1	6.6	6.9	8.3	8.9	8.7	9.1	10.5	12.3	12.7	12.4	12.9	13.2	12.7	12.8	13.1	12.4	11.6	11.0	10.0	8.3	7.1	7.4	7.8
Mobile, Ala.	7.9	8.1	7.8	8.1	8.3	8.9	8.7	9.1	10.5	12.3	12.8	13.0	12.9	13.0	12.9	13.0	12.5	12.5	11.5	10.2	10.4	9.7	9.5	8.7	7.8	8.5
Montgomery, Ala.	6.4	6.2	6.5	5.8	5.5	5.3	5.3	5.3	7.0	8.4	8.9	9.8	10.6	11.8	13.0	12.9	13.0	12.4	11.8	10.4	10.0	10.0	8.9	8.0	7.1	8.6
Moorhead, Minn.	5.7	5.5	5.6	5.1	5.3	4.9	4.2	4.6	5.7	6.9	7.3	7.3	8.0	8.6	8.5	9.6	9.5	10.3	9.2	8.6	7.3	6.2	5.9	6.4	6.3	5.6
Nantucket, Mass.	11.4	10.9	10.2	10.9	10.3	9.6	9.5	13.5	11.2	13.3	14.5	15.2	14.7	15.1	15.6	16.1	16.4	16.3	14.9	14.0	13.8	12.8	12.4	11.1	11.8
Nashville, Tenn.	11.4	11.1	10.8	11.3	12.3	12.2	12.7	13.5	13.8	14.7	15.1	15.2	14.4	14.4	14.3	14.6	13.6	12.8	11.3	11.3	11.5	11.3	11.1	11.4	12.6
New Haven, Conn.	5.8	5.3	5.1	5.0	5.2	4.7	4.7	5.0	6.6	7.9	9.1	9.9	10.9	10.9	11.1	10.9	10.4	10.5	10.1	10.4	8.9	8.1	6.0	6.3	5.7	7.4
New London, Conn.	7.0	7.7	7.9	8.2	8.1	7.5	7.7	8.6	9.5	10.2	11.3	11.8	12.7	12.4	12.4	12.6	12.2	11.8	10.4	10.1	8.9	8.1	7.4	6.9	6.6	9.3
New Orleans, La.	6.4	6.3	6.3	6.9	6.9	6.9	6.9	7.7	8.3	8.5	9.7	10.0	10.3	10.7	11.0	10.7	10.6	9.1	7.8	7.2	6.2	6.2	6.1	5.8	5.8	5.8
New York, N. Y.	7.3	7.6	7.3	6.6	6.2	6.3	6.2	6.7	7.8	9.2	10.2	10.2	10.4	10.7	11.9	11.8	11.0	10.6	9.1	7.8	7.2	9.4	9.3	8.9	8.3	7.8
Norfolk, Va.	14.2	14.2	13.1	13.1	12.8	12.8	12.0	12.0	13.1	14.5	15.3	16.3	15.8	16.1	16.4	16.3	16.1	15.6	14.0	14.0	13.7	14.0	13.7	13.2	13.7	14.0
Northfield, Vt.	8.8	8.3	8.5	8.6	8.6	8.2	9.0	9.3	10.2	10.8	11.5	11.0	11.9	12.2	12.1	11.7	12.6	12.1	11.6	11.4	10.1	8.2	8.5	8.4	8.4	9.9
North Platte, Nebr.	7.0	7.0	6.7	6.1	5.9	5.4	5.7	6.1	8.3	10.3	11.0	11.4	12.1	13.6	13.6	13.6	13.6	12.6	11.7	11.6	9.1	6.7	7.5	8.4	8.2	7.8
Oklahoma, Okla.	12.5	11.8	11.2	11.5	10.6	10.3	9.8	10.7	12.5	14.6	15.0	16.3	15.0	14.8	15.8	16.9	16.9	16.3	16.0	15.2	14.5	13.7	12.1	12.8	12.5	12.5
Omaha, Nebr.	10.0	9.8	9.9	9.5	9.1	9.6	10.4	9.4	10.6	12.8	14.5	14.5	15.0	14.8	14.8	14.7	15.0	14.5	14.4	14.4	14.0	13.0	10.3	9.8	10.4	10.6
Oswego, N. Y.	7.8	7.4	7.5	7.4	7.9	7.7	8.2	8.9	9.3	10.7	11.5	11.1	11.1	11.8	11.8	11.3	11.9	11.4	11.2	11.0	11.1	9.2	7.7	7.8	7.6	7.6
Palestine, Tex.	10.0	10.0	9.0	8.9	10.0	9.4	9.5	10.0	10.4	10.4	10.4	10.7	10.7	10.7	11.1	11.7	11.9	11.7	11.4	10.3	9.2	8.7	9.3	8.7	9.3	8.9
	6.7	6.5	6.4	6.3	6.5	6.1	5.7	5.2	6.4	8.2	9.0	9.4	9.7	9.9	9.7	9.9	9.7	10.4	10.2	9.9	9.4	7.2	6.3	6.8	7.0	7.4

TABLE VI.—*Average wind movement, etc.*—Continued.

Stations.	1 a. m.	2 a. m.	3 a. m.	4 a. m.	5 a. m.	6 a. m.	7 a. m.	8 a. m.	9 a. m.	10 a. m.	11 a. m.	Noon.	1 p. m.	2 p. m.	3 p. m.	4 p. m.	5 p. m.	6 p. m.	7 p. m.	8 p. m.	9 p. m.	10 p. m.	11 p. m.	Midnight.	Mean.
Parkersburg, W. Va..	4.7	4.3	4.2	4.0	3.6	3.9	4.2	4.5	5.8	6.8	7.5	8.1	8.1	8.8	9.0	9.2	8.4	8.4	6.6	5.5	5.3	6.1	5.9	5.6	6.2
Pensacola, Fla.....	9.2	8.6	8.3	7.8	8.1	7.3	7.7	7.8	8.8	10.4	10.3	10.3	10.5	12.1	12.6	13.4	13.5	12.8	11.5	10.4	9.9	9.9	9.5	9.9	10.0
Philadelphia, Pa.....	10.1	10.5	10.6	9.9	9.3	9.5	9.9	11.3	12.8	12.3	12.6	12.6	13.2	14.1	13.8	13.3	13.0	11.9	11.5	11.7	11.0	11.1	11.2	10.8	11.6
Pierre, S. Dak.....	12.2	11.7	9.1	8.4	8.1	7.6	9.4	10.3	10.3	12.2	13.4	14.0	15.1	15.1	15.0	15.3	16.2	16.7	16.2	15.9	14.1	13.1	14.1	13.5	12.8
Pittsburg, Pa.....	5.6	5.3	5.2	5.1	4.7	4.4	5.0	5.5	6.5	7.3	7.7	8.0	8.5	9.1	9.7	10.1	9.7	9.1	7.7	7.4	7.2	7.0	6.4	6.5	7.0
Port Angeles, Wash..	4.8	5.1	5.2	4.8	4.3	4.8	4.6	4.8	4.7	4.3	2.9	4.1	5.3	6.5	6.8	7.4	7.4	6.5	7.8	6.7	5.7	5.4	4.7	4.8	5.4
Port Huron, Mich....	9.4	9.5	9.9	9.9	9.6	8.9	8.1	9.0	10.4	11.0	12.0	12.0	12.7	14.3	13.7	14.2	13.4	12.3	11.3	10.0	9.7	9.5	10.0	10.1	10.9
Portland, Me.....	6.8	6.6	6.7	6.9	7.3	7.0	7.1	8.1	8.9	9.5	9.8	10.4	11.6	11.6	11.8	11.2	11.2	10.2	9.1	8.0	7.1	6.7	6.1	6.3	8.6
Portland, Oreg.....	9.9	10.1	8.3	8.4	7.7	7.0	8.0	7.9	6.9	7.7	8.7	9.8	10.8	10.4	10.6	11.1	10.9	11.4	11.7	10.9	9.7	8.9	9.6	9.5	9.4
Pueblo, Colo.....	7.5	7.4	7.0	7.6	7.6	7.4	6.6	7.1	7.5	7.7	8.3	9.3	9.8	10.6	11.1	11.2	11.0	11.3	12.1	12.5	9.9	8.4	7.8	6.9	8.9
Raleigh, N. C.....	5.9	6.4	6.4	5.9	6.0	6.0	6.0	7.0	7.4	7.6	8.0	8.1	8.5	8.9	9.3	8.7	8.6	7.2	6.0	5.9	6.3	6.0	6.1	6.0	7.0
Rapid City, S. Dak...	10.3	10.3	10.0	9.9	10.1	10.4	11.0	10.3	9.9	10.1	11.0	12.1	13.5	14.7	14.7	15.4	15.5	15.6	14.1	13.5	10.7	9.5	10.5	11.6	11.9
Red Bluff, Cal.....	4.7	5.0	5.0	5.3	5.1	5.1	5.0	5.9	5.8	5.8	7.3	8.3	8.6	8.8	8.3	8.7	8.5	8.5	8.5	8.4	7.3	5.9	5.5	5.3	6.7
Rochester, N. Y.....	5.3	5.4	5.7	6.2	6.2	6.3	6.8	8.2	8.2	8.6	8.9	10.1	10.2	10.2	9.8	9.9	10.0	9.0	8.0	7.2	6.7	6.3	6.1	5.6	7.7
Roseburg, Oreg.....	2.8	3.0	2.6	2.2	2.4	2.7	2.4	2.5	2.6	2.6	2.9	4.0	4.4	4.6	5.4	6.6	7.1	8.0	7.8	7.5	7.4	5.9	4.6	3.2	4.4
Sacramento, Cal.....	7.8	7.6	7.9	7.7	8.6	8.0	7.2	7.4	7.2	6.9	8.0	9.1	9.9	10.1	10.0	9.6	9.8	10.0	9.3	9.8	9.9	9.4	9.3	8.7	8.7
St. Louis, Mo.....	10.7	10.1	10.7	10.8	10.6	10.4	9.9	10.5	11.4	11.3	11.6	12.3	12.8	13.3	13.7	14.0	14.1	13.7	12.7	11.4	10.4	10.5	9.9	10.8	11.6
St. Paul, Minn.....	6.1	5.5	6.1	6.5	6.4	6.1	7.0	6.9	7.4	8.7	9.8	9.8	10.6	11.0	10.6	10.3	10.3	9.4	8.5	7.1	6.0	5.8	6.3	5.7	7.8
St. Vincent, Minn....	7.7	7.5	7.5	6.8	6.5	6.5	6.7	7.4	8.8	10.1	11.2	11.1	11.8	12.9	13.0	13.1	13.1	12.1	11.5	10.2	8.3	7.8	7.8	7.9	9.5
Salt Lake City, Utah.	5.7	6.1	6.1	5.9	5.4	5.3	5.0	5.1	5.2	5.1	5.9	7.7	9.9	11.1	11.8	12.6	13.5	13.0	11.9	10.6	8.5	6.1	5.2	5.2	7.8
San Antonio, Tex.....	6.3	6.0	6.3	5.9	5.6	5.2	4.9	4.9	6.1	8.0	8.8	9.0	8.9	9.3	9.5	9.9	9.7	10.5	10.5	9.5	7.7	8.9	8.4	7.5	7.8
San Diego, Cal.....	3.0	2.7	3.0	3.0	3.2	3.8	3.5	3.4	3.5	3.0	3.2	3.9	5.8	6.7	8.3	9.2	9.4	9.4	9.0	8.2	7.0	5.7	3.8	3.1	5.2
Sandusky, Ohio.....	8.6	7.9	7.6	8.0	8.3	8.1	9.0	8.9	8.8	9.2	10.1	10.8	11.3	10.9	10.4	10.1	9.9	9.3	9.2	8.5	8.3	8.1	8.4	8.9	9.1
San Francisco, Cal...	10.2	9.1	6.9	6.9	7.1	6.1	5.5	6.7	6.2	6.6	7.1	8.0	8.2	9.6	11.6	13.8	16.0	17.7	18.6	18.5	17.0	14.8	12.8	10.9	10.7
San Luis Obispo, Cal.	4.8	4.6	5.3	5.7	5.7	5.9	5.6	5.6	5.8	5.6	5.8	6.4	7.7	8.3	10.0	11.1	12.2	12.9	12.3	11.6	10.4	8.1	6.3	5.3	7.6
Santa Fe, N. Mex.....	8.0	8.1	6.8	5.6	5.2	4.9	4.3	4.7	5.3	6.4	7.8	9.9	10.1	11.5	11.9	11.6	11.9	11.8	12.3	11.9	9.6	6.8	7.1	7.8	8.4
Sault Ste Marie, Mich.	4.6	5.0	5.1	4.9	5.3	5.2	5.2	5.5	6.5	7.7	9.2	10.3	10.2	10.9	10.8	10.7	10.6	11.0	9.5	8.5	7.5	6.5	5.1	5.2	7.5
Savannah, Ga.....	8.4	7.5	7.8	8.2	7.8	7.1	7.1	8.1	9.0	9.0	9.8	10.8	11.9	12.5	12.8	12.4	12.6	12.7	11.1	9.1	8.7	8.6	8.3	8.5	9.6
Seattle, Wash.....	5.2	5.7	6.0	6.1	6.3	5.6	5.0	4.8	4.7	4.6	5.9	6.3	6.7	7.6	7.9	8.0	7.9	8.1	8.3	8.3	8.0	7.8	6.2	5.0	6.5
Shreveport, La.....	6.5	5.9	6.3	6.2	6.1	6.3	6.2	6.5	6.9	8.3	8.1	8.5	9.8	10.1	10.8	10.6	10.1	10.1	9.6	7.6	6.7	7.0	7.2	7.5	7.9
Sioux City, Iowa.....	11.3	11.5	11.0	11.3	11.1	10.7	10.1	9.9	11.0	12.5	13.1	13.8	13.8	14.8	14.5	15.4	15.7	15.7	13.5	13.2	11.2	12.4	12.4	13.0	12.6
Spokane, Wash.....	4.3	4.9	4.9	4.8	5.2	5.3	5.0	5.0	5.2	5.9	7.1	7.3	7.8	7.6	8.9	9.4	10.2	9.4	9.2	8.2	6.8	5.5	5.7	4.6	6.6
Springfield, Ill.....	9.5	9.4	9.4	9.6	9.4	9.1	8.9	8.4	9.8	11.4	12.0	12.9	13?1	13.5	13.1	13.3	13.5	13.0	11.1	9.5	8.4	9.0	9.9	9.5	10.7
Springfield, Mo.....	10.4	11.2	10.7	10.4	11.3	10.9	9.3	10.0	10.2	11.6	13.0	12.7	13.0	13.3	13.2	12.9	13.3	13.0	11.2	11.2	11.1	10.8	10.9	10.8	11.5
Tampa, Fla.....	5.4	5.7	6.0	6.4	5.6	5.6	6.2	7.0	8.1	8.9	9.2	9.4	9.6	10.4	9.9	10.2	10.0	9.9	8.6	6.9	6.5	6.2	6.0	6.1	7.7
Tatoosh Island, Wash.	11.8	12.0	12.4	12.2	13.5	12.7	10.7	11.1	10.6	11.1	11.3	11.9	12.2	11.2	12.6	12.7	13.2	13.5	13.1	13.8	14.6	13.4	12.2	11.9	12.3
Titusville, Fla.....	11.1	10.9	11.8	12.2	11.9	11.1	12.0	12.1	14.2	16.3	15.9	15.3	16.3	16.3	17.5	18.8	17.9	16.7	16.0	14.6	13.5	12.9	11.5	10.4	14.0
Toledo, Ohio.....	8.7	8.1	8.0	7.9	8.2	8.8	9.3	9.1	10.0	11.3	12.3	13.5	14.4	13.8	14.0	13.7	12.9	11.9	10.3	8.8	9.1	9.3	9.5	9.2	10.5
Tucson, Ariz.....	4.3	3.6	3.4	3.3	3.7	3.4	3.8	4.1	4.2	3.8	3.6	4.3	4.8	5.1	5.9	6.5	7.1	8.0	8.1	8.3	7.2	5.7	5.0	5.3	5.1
Vicksburg, Miss.....	7.3	7.2	7.6	7.6	7.6	7.1	6.9	6.7	6.8	7.1	8.0	8.6	8.2	9.3	9.2	9.5	9.8	9.4	8.3	6.5	6.6	7.0	7.6	7.4	7.8
Vineyard Haven, Mass	8.1	8.1	8.0	8.3	8.3	9.1	9.3	10.4	10.6	11.3	11.5	12.1	11.6	12.0	11.6	11.3	10.6	9.3	7.4	8.0	8.0	8.5	8.7	8.6	9.6
Walla Walla, Wash...	6.4	6.1	5.5	5.6	4.9	5.3	5.2	5.3	5.4	4.8	5.8	6.6	7.0	7.9	8.2	7.9	7.2	7.2	7.2	7.4	7.3	5.4	5.2	6.4	6.3
Washington, D. C.....	7.9	7.3	7.1	6.7	6.1	6.0	6.9	8.2	9.4	9.7	10.1	10.6	11.2	11.4	11.9	11.9	11.3	9.8	8.7	7.6	6.8	6.8	7.7	7.3	8.7
Wichita, Kans.....	9.4	9.7	9.1	9.0	9.0	8.8	8.7	8.6	8.9	11.1	12.6	13.3	12.8	13.7	13.7	13.6	13.0	12.3	11.4	10.5	9.1	9.2	9.2	8.9	10.7
Williston, N. Dak.....	10.2	9.4	8.8	8.7	8.3	7.8	7.5	8.3	8.3	9.7	12.0	12.6	13.2	14.8	15.4	15.1	16.0	15.3	14.8	12.8	10.1	8.7	9.3	10.0	11.1
Wilmington, N. C.....	8.3	8.2	8.3	8.0	8.4	8.5	7.8	8.5	9.5	10.2	10.1	11.3	11.8	12.6	12.9	13.2	12.6	10.9	10.4	9.3	8.6	8.9	8.5	8.6	9.8
Winnemucca, Nev....	8.6	10.2	10.2	9.4	9.5	9.8	9.5	9.7	9.2	8.9	9.1	11.1	11.5	12.4	13.4	13.6	14.2	15.2	15.0	14.8	13.3	10.9	9.1	8.5	11.1
Woods Holl, Mass.....	11.9	12.4	12.6	13.0	13.0	13.3	14.5	14.7	15.2	15.0	15.1	15.4	15.3	15.8	16.6	16.5	15.1	13.0	11.6	11.5	12.1	12.6	12.5	11.6	13.8
Yuma, Ariz.....	6.5	6.2	5.5	4.9	4.1	4.1	4.4	4.1	4.3	4.8	7.2	8.0	8.6	8.4	9.1	9.5	10.0	10.1	10.1	10.5	9.9	8.5	8.1	7.4	7.3

TABLE VII.—*Heights of rivers above low-water mark, April*, 1895.

Stations.	Distance to mouth of river.	Danger-point on gauge.	Highest water.		Lowest water.		Mean stage.	Monthly range.
			Height.	Date.	Height.	Date.		
Mississippi River.	*Miles.*	*Feet.*	*Feet.*		*Feet.*		*Feet.*	*Feet*
St. Paul, Minn.....	2,057	14.0	1.2	12	0.3	29	0.8	0.9
La Crosse, Wis.....	1,867	10.0	3.2	18,19	1.7	1	2.3	1.5
Dubuque, Iowa.....	1,759	15.0	3.7	22	1.8	2-6	2.8	1.9
Davenport, Iowa.....	1,653	15.0	2.4	23,24	1.3	6	1.8	1.1
Keokuk, Iowa.....	1,523	14.0	2.2	25-28	1.2	6,7,9-14	1.6	1.0
Hannibal, Mo.....	1,402	17.0	2.6	27,28	1.7	8-16	2.1	0.9
St. Louis, Mo.....	1,321	30.0	9.6	12	6.1	27-30	7.4	3.5
Memphis, Tenn.....	910	33.0	22.8	1	11.9	13	16.3	10.9
Helena, Ark.....	834	37.0	31.0	1	18.0	14	23.4	13.0
Arkansas City, Ark...	702	42.0	32.5	1,2	20.2	16	25.6	12.3
Greenville, Miss.....	662	40.0	27.7	2	16.4	16	21.4	11.3
Vicksburg, Miss.....	541	41.0	31.7	4	19.1	18	24.7	12.6
New Orleans, La.....	108	13.0	11.1	8	7.1	21,22	8.7	4.0
Illinois River.								
Beardstown, Ill.....	76	12.0	7.6	17-23	7.1	6-8,30	7.3	0.5
Missouri River.								
Pierre, S. Dak.....	1,132	13.0	6.5	2	2.6	23,24	3.9	3.9
Sioux City, Iowa.....	802	18.7	11.9	4	7.9	27-29	9.1	4.0
Omaha, Nebr.....	667	18.0	11.4	6	7.8	27,28	9.0	3.6
Kansas City, Mo.....	386	21.0	13.9	8,9	8.6	29	10.1	5.3
Ohio River.								
Parkersburg, W. Va.	786	38.0	24.4	12	6.5	30	13.1	17.9
Catlettsburg, Ky.....	652	50.0	32.5	13	9.7	30	21.6	22.8
Cincinnati, Ohio.....	500	45.0	33.9	15	12.8	30	24.4	21.1
Louisville, Ky.....	368	24.0	12.2	16	6.5	30	9.8	5.7
Evansville, Ind.....	184	30.0	25.9	20	12.3	30	19.4	13.6
Paducah, Ky.....	47	40.0	23.3	22	13.7	30	18.5	9.6
Cairo, Ill.....	1,140*	40.0	27.2	21-23	19.1	30	23.5	8.1
Monongahela River.								
Pittsburg, Pa.....	966†	22.0	20.2	11	2.7	30	8.7	17.5
Great Kanawha River.								
Charleston, W. Va....	61	30.0	26.0	9	4.7	28	8.1	21.3
Scioto River.	*Miles.*	*Feet.*	*Feet.*		*Feet.*		*Feet.*	*Feet*
Circleville, Ohio.....	65	18.0	11.8	9	1.9	1-7,26-30	3.5	9.9
Big Sandy River.								
Louisa, Ky.....	26	.....	10.0	10	5.2	27	7.3	4.8
Wabash River.								
Mount Carmel, Ill....	50	15.0	6.4	12	2.3	29,30	3.7	4.1
Cumberland River.								
Burnside, Ky.....	404	50.0	16.9	18	4.3	8	6.8	12.6
Nashville, Tenn.....	145	40.0	28.6	19	7.4	7	14.5	20.6
Tennessee River.								
Knoxville, Tenn.....	640	29.0	.....	.....	.....	.....	.....	.....
Chattanooga, Tenn...	455	33.0	13.0	11	5.9	29,30	8.3	7.1
Johnsonville, Tenn...	94	21.0	14.3	1	8.1	7	10.6	6.2
Arkansas River.								
Fort Smith, Ark.....	351	22.0	2.8	1	1.4	23,24	2.0	1.4
Litttle Rock, Ark.....	176	23.0	6.3	2,3	3.3	25,26	4.6	3.0
Red River.								
Shreveport, La.....	449	29.2	4.0	1	—1.6	27,28	1.3	5.6
James River.								
Lynchburg, Va.....	251	18.0	15.0	9	1.3	26,27	3.0	13.7
Congaree River.								
Columbia, S. C.....	.....	.....	15.0	9	1.8	{2,6,15,16,} {25,26.}	3.5	7.5
Savannah River.								
Augusta, Ga.....	140	32.6	21.8	9	8.8	6,7	12.3	13.0
Alabama River.								
Montgomery, Ala.....	215	48.0	21.8	10	6.7	27	11.2	15.1
Willamette River.								
Portland, Oreg.....	.....	.....	15.0	8.7	30	5.8	7,14,15	6.7	2.9
Sacramento River.								
Red Bluff, Cal.....	.....	.....	20.0	8.4	26,27	7.1	{5, 11-13,} {17-20.}	7.6	1.3
Sacramento, Cal.....	.....	.....	28.0	22.8	29,30	20.5	1	21.4	2.3

*To mouth of Mississippi River. †To mouth of Ohio River.

TABLE VIII.—*Temperature of the wet-bulb thermometer, April, 1895.*

Stations.	Local time faster or slower than 75th meridian time.	8 A. M.			8 P. M.		
		Max.	Min.	Mean.	Max.	Min.	Mean.
New England.	h. m.	°	°	°	°	°	°
Eastport, Me	22 F.	45	18	36	44	26	36
Portland, Me	19 F.	51	21	39	51	26	39
Northfield, Vt	9 F.	52	14	35	51	22	38
Boston, Mass	16 F.	54	23	40	58	30	41
Nantucket, Mass	20 F.	50	28	41	54	31	40
Woods Holl, Mass	17 F.	.....	.....	.....	52	30	40
Block Island, R. I	14 F.	50	30	40	55	34	41
New Haven, Conn	8 F.	53	27	40	58	30	42
New London, Conn	12 F.	54	27	42	55	32	43
Middle Atlantic States.							
Albany, N. Y	5 F.	54	30	41	58	29	44
New York, N. Y	4 F.	57	27	42	60	31	44
Harrisburg, Pa	7 S.	61	29	43	61	34	47
Philadelphia, Pa	0	60	30	44	62	33	46
Baltimore, Md	6 S.	59	29	44	63	34	48
Washington, D. C	8 S.	60	32	45	64	34	49
Lynchburg, Va	16 S.	61	34	47	64	32	51
Norfolk, Va	5 S.	65	36	50	66	38	53
South Atlantic States.							
Charlotte, N. C	23 S.	62	32	48	64	40	52
Hatteras, N. C	2 S.	68	40	55	66	42	55
Kittyhawk, N. C	3 S.	65	38	52	65	39	52
Raleigh, N. C	14 S.	64	36	50	64	38	52
Wilmington, N. C	12 S.	68	38	55	66	45	57
Charleston, S. C	20 S.	67	39	56	66	48	58
Augusta, Ga	27 S.	65	40	53	66	43	55
Savannah, Ga	24 S.	67	42	57	67	46	58
Jacksonville, Fla	26 S.	68	42	58	67	48	60
Florida Peninsula.							
Jupiter, Fla	30 S.	72	56	64	72	54	64
Key West, Fla	27 S.	76	58	68	75	59	68
Tampa, Fla	30 S.	71	49	62	72	53	64
Titusville, Fla	23 S.	70	51	62	71	53	63
Eastern Gulf States.							
Atlanta, Ga	37 S.	60	34	50	65	40	55
Pensacola, Fla	49 S.	70	40	60	71	49	62
Mobile, Ala	52 S.	68	42	58	70	48	62
Montgomery, Ala	45 S.	64	38	55	66	47	60
Meridian, Miss	55 S.	65	40	55	72	50	60
Vicksburg, Miss	1 08 S.	66	43	56	67	44	58
New Orleans, La	1 00 S.	68	45	59	68	52	61
Western Gulf States.							
Shreveport, La	1 14 S.	66	40	54	70	44	59
Fort Smith, Ark	1 17 S.	62	37	51	67	45	58
Little Rock, Ark	1 08 S.	64	37	52	68	41	56
Corpus Christi, Tex	1 30 S.	72	44	63	73	55	67
Galveston, Tex	1 19 S.	69	45	61	69	52	63
Palestine, Tex	1 22 S.	64	38	54	69	44	60
San Antonio, Tex	1 34 S.	68	36	54	71	44	61
Ohio Valley and Tenn.							
Chattanooga, Tenn	41 S.	62	34	50	65	38	54
Knoxville, Tenn	36 S.	60	32	48	63	36	52
Memphis, Tenn	1 00 S.	66	40	53	69	42	57
Nashville, Tenn	47 S.	63	33	50	67	37	54
Lexington, Ky	38 S.	61	30	46	63	34	50
Louisville, Ky	43 S.	60	33	47	64	37	52
Indianapolis, Ind	44 S.	61	32	44	66	35	50
Cincinnati, Ohio	38 S.	59	31	45	64	36	52
Columbus, Ohio	32 S.	57	27	44	62	33	48
Pittsburg, Pa	20 S.	60	28	45	68	34	52
Parkersburg, W. Va	26 S.	58	29	46	67	36	53
Lower Lake Region.							
Buffalo, N. Y	15 S.	58	26	39	60	26	40
Oswego, N. Y	6 S.	57	23	37	58	27	39
Rochester, N. Y	11 S.	59	25	39	58	27	41
Erie, Pa	20 S.	58	27	40	59	30	42
Cleveland, Ohio	27 S.	58	26	41	62	30	46
Sandusky, Ohio	30 S.	55	28	42	55	30	44
Toledo, Ohio	34 S.	56	27	41	57	31	45
Detroit, Mich	32 S.	56	27	40	60	28	44
Upper Lake Region.							
Alpena, Mich	34 S.	46	23	36	47	28	37
Grand Haven, Mich	45 S.	59	26	40	60	30	43
Marquette, Mich	49 S.	51	26	36	51	22	37
Port Huron, Mich	30 S.	50	27	37	56	26	39
Sault Ste. Marie, Mich	37 S.	44	22	34	52	23	36
Chicago, Ill	50 S.	52	31	40	57	29	43

Stations.	Local time faster or slower than 75th meridian time.	8 A. M.			8 P. M.		
		Max.	Min.	Mean.	Max.	Min.	Mean.
Up. Lake Region—Con.	h. m.	°	°	°	°	°	°
Milwaukee, Wis	51 S.	52	29	40	52	31	40
Green Bay, Wis	52 S.	54	28	38	59	30	41
Duluth, Minn	1 08 S.	44	25	36	49	29	38
North Dakota.							
Moorhead, Minn	1 27 S.	54	22	38	61	37	49
St. Vincent, Minn	1 29 S.	50	26	37	53	32	43
Bismarck, N. Dak	1 42 S.	55	22	36	60	36	49
Williston, N. Dak	1 54 S.	48	22	34	54	36	45
Upper Mississippi Valley.							
St. Paul, Minn	1 12 S.	54	27	40	61	33	47
La Crosse, Wis	1 05 S.	58	27	40	64	32	48
Davenport, Iowa	1 02 S.	59	30	42	64	33	48
Des Moines, Iowa	1 14 S.	60	26	43	66	34	51
Keokuk, Iowa	1 06 S.	60	31	45	64	35	50
Cairo, Ill	56 S.	64	39	52	66	38	54
Springfield, Ill	58 S.	59	28	45	63	36	50
Hannibal, Mo	1 05 S.	62	32	46	67	38	52
St. Louis, Mo	1 01 S.	63	35	48	66	40	54
Missouri Valley.							
Columbia, Mo	1 09 S.	.....	.....	.....	65	38	52
Kansas City, Mo	1 18 S.	59	33	47	64	33	53
Springfield, Mo	1 13 S.	59	33	47	62	40	52
Omaha, Nebr	1 24 S.	59	30	45	68	33	52
Sioux City, Iowa	1 26 S.	58	28	43	67	32	50
Pierre, S. Dak	1 41 S.	55	26	41	62	36	52
Huron, S. Dak	1 32 S.	54	28	40	65	38	50
Northern Slope.							
Havre, Mont	2 19 S.	50	22	32	56	33	45
Miles City, Mont	2 08 S.	51	24	37	56	34	49
Helena, Mont	2 28 S.	45	24	33	52	29	42
Rapid City, S. Dak	1 53 S.	52	18	37	59	32	47
Cheyenne, Wyo	1 59 S.	42	22	32	53	26	43
Lander, Wyo	2 15 S.	41	20	29	47	26	41
North Platte, Nebr	1 43 S.	54	18	40	66	32	50
Middle Slope.							
Denver, Colo	2 00 S.	47	22	34	48	36	42
Pueblo, Colo	1 58 S.	45	17	33	50	38	44
Concordia, Kans	1 31 S.	61	27	46	66	33	52
Dodge City, Kans	1 40 S.	62	29	43	64	33	50
Wichita, Kans	1 29 S.	62	31	48	67	38	55
Oklahoma, Okla	1 30 S.	63	36	50	69	42	58
Southern Slope.							
Abilene, Tex	1 39 S.	64	33	50	68	43	56
Amarillo, Tex	1 47 S.	57	29	41	56	37	47
Southern Plateau.							
El Paso, Tex	2 06 S.	53	21	35	53	35	48
Santa Fe, N. Mex	2 04 S.	40	13	30	44	30	39
Tucson, Ariz	2 24 S.	50	25	38	59	41	53
Yuma, Ariz	2 38 S.	57	36	48	64	46	57
Independence, Cal	2 53 S.	42	26	37	52	34	46
Middle Plateau.							
Carson City, Nev	2 39 S.	42	18	32	50	28	42
Winnemucca, Nev	2 51 S.	42	18	30	50	34	42
Salt Lake City, Utah	2 27 S.	45	22	37	50	31	44
Northern Plateau.							
Baker City, Oreg	2 51 S.	45	20	32	53	36	44
Idaho Falls, Idaho	2 28 S.	43	16	31	51	30	43
Spokane, Wash	2 49 S.	46	25	35	52	31	44
Walla Walla, Wash	2 53 S.	57	31	41	58	39	50
N. Pac. Coast Region.							
Fort Canby, Wash	3 16 S.	49	35	43	50	40	45
Port Angeles, Wash	3 14 S.	46	28	38	54	37	45
Seattle, Wash	3 09 S.	48	32	41	55	36	46
Tatoosh Island, Wash	3 19 S.	50	35	42	53	37	44
Portland, Oreg	3 11 S.	49	33	42	57	38	47
Roseburg, Oreg	3 13 S.	48	30	40	61	38	50
Mid. Pac. Coast Region.							
Eureka, Cal	3 17 S.	54	32	45	54	41	49
Red Bluff, Cal	3 09 S.	53	30	45	64	41	54
Sacramento, Cal	3 06 S.	56	40	47	63	43	55
San Francisco, Cal	3 10 S.	52	38	48	57	44	51
S. Pac. Coast Region.							
Fresno, Cal	2 59 S.	54	34	46	68	41	55
Los Angeles, Cal	2 53 S.	55	40	48	57	48	54
San Diego, Cal	2 49 S.	55	45	50	58	50	55
San Luis Obispo, Cal	3 03 S.	52	38	46	55	45	51

TABLE IX.—*Resultant winds from observations at 8 a. m. and 8 p. m., daily, during April, 1895.*

Stations.	Component direction from—				Resultant.	
	N.	S.	E.	W.	Direction from—	Duration.
New England.	*Hours.*	*Hours.*	*Hours.*	*Hours.*	°	*Hours.*
Eastport, Me	18	19	13	22	s. 84 w.	9
Portland, Me	20	22	12	18	s. 72 w.	6
Northfield, Vt	25	27	5	16	s. 80 w.	11
Boston, Mass	19	17	17	18	n. 27 w.	2
Nantucket, Mass	17	19	18	23	s. 68 w.	5
Woods Holl, Mass	8	15	8	8	s.	7
Block Island, R. I	16	18	20	22	s. 45 w.	3
New Haven, Conn	24	18	20	11	n. 56 e.	11
New London, Conn	21	14	19	18	n. 8 e.	7
Middle Atlantic States.						
Albany, N. Y	22	22	7	17	w.	10
New York, N. Y	28	12	15	15	n.	16
Harrisburg, Pa	17	9	28	17	n. 54 e.	14
Philadelphia, Pa	21	15	25	13	n. 63 e.	13
Baltimore, Md	16	16	23	17	e.	6
Washington, D. C	21	18	20	15	n. 59 e.	6
Lynchburg, Va	22	16	19	20	n. 9 w.	6
Norfolk, Va	19	20	23	13	s. 84 e.	10
South Atlantic States.						
Charlotte, N. C	13	26	19	20	s. 4 w.	13
Hatteras, N. C	19	28	11	13	s. 13 w.	9
Kittyhawk, N. C	17	27	18	14	s. 22 e.	11
Raleigh, N. C	25	19	8	15	n. 49 w.	9
Wilmington, N. C	15	25	15	19	s. 22 w.	11
Charleston, S. C	15	27	15	18	s. 14 w.	12
Augusta, Ga	18	20	18	22	s. 63 w.	4
Savannah, Ga	14	29	13	14	s. 4 w.	15
Jacksonville, Fla	16	27	17	17	s.	11
Florida Peninsula.						
Jupiter, Fla	14	22	17	16	s. 7 e.	8
Key West, Fla	22	14	29	7	n. 70 e.	23
Tampa, Fla	17	14	17	24	n. 67 w.	8
Titusville, Fla	16	22	19	16	s. 27 e.	7
Eastern Gulf States.						
Atlanta, Ga	19	16	18	25	n. 67 w.	8
Pensacola, Fla	16	24	16	23	s. 41 w.	11
Mobile, Ala	21	21	9	19	w.	10
Montgomery, Ala	11	26	17	20	s. 11 w.	15
Meridian, Miss	14	25	18	17	s. 5 e.	11
Vicksburg, Miss	14	28	12	20	s. 30 w.	16
New Orleans, La	15	29	16	18	s. 8 w.	14
Western Gulf States.						
Shreveport, La	17	28	14	16	s. 10 w.	11
Fort Smith, Ark	12	16	31	13	s. 77 e.	18
Little Rock, Ark	17	17	13	24	w.	11
Corpus Christi, Tex	9	29	34	7	s. 53 e.	34
Galveston, Tex	12	35	16	10	s. 15 e.	24
Palestine, Tex	13	30	11	19	s. 25 w.	19
San Antonio, Tex	18	21	25	8	s. 80 e.	17
Ohio Valley and Tennessee.						
Chattanooga, Tenn	19	16	20	20	n.	3
Knoxville, Tenn	11	14	18	20	s. 34 w.	4
Memphis, Tenn	15	19	21	17	s. 45 e.	6
Nashville, Tenn	22	19	14	19	n. 59 w.	6
Lexington, Ky	17	20	17	18	s. 18 w.	3
Louisville, Ky	21	19	17	12	n. 68 e.	5
Indianapolis, Ind	22	15	26	15	n. 58 e.	13
Cincinnati, Ohio	25	15	22	14	n. 39 e.	13
Columbus, Ohio	24	15	21	14	n. 38 e.	11
Pittsburg, Pa	21	16	15	15	n.	5
Parkersburg, W. Va	19	15	22	14	n. 63 e.	9
Lower Lake Region.						
Buffalo, N. Y	15	12	24	22	n. 34 e.	4
Oswego, N. Y	23	15	15	21	n. 37 w.	10
Rochester, N. Y	21	13	20	21	n. 7 w.	8
Erie, Pa	16	16	18	22	w.	4
Cleveland, Ohio	19	15	20	20	n.	4
Sandusky, Ohio	16	12	29	14	n. 75 e.	16
Toledo, Ohio	17	9	29	16	n. 58 e.	15
Detroit, Mich	25	13	29	15	n. 49 e.	18
Upper Lake Region.						
Alpena, Mich	21	11	26	14	n. 50 e.	16
Grand Haven, Mich	22	13	26	11	n. 59 e.	18
Marquette, Mich	33	11	15	14	n. 3 e.	22
Port Huron, Mich	26	13	25	15	n. 38 e.	16
Sault Ste. Marie, Mich	16	14	22	22	n.	2
Chicago, Ill	28	11	25	9	n. 43 e.	23

Stations.	Component direction from—				Resultant.	
	N.	S.	E.	W.	Direction from—	Duration.
Upper Lake Region—Cont'd.	*Hours.*	*Hours.*	*Hours.*	*Hours.*	°	*Hours.*
Milwaukee, Wis	28	13	24	8	n. 47 e.	22
Green Bay, Wis	36	14	12	6	n. 15 e.	23
Duluth, Minn	33	3	33	8	n. 40 e.	29
North Dakota.						
Moorhead, Minn	24	20	16	9	n. 60 e.	8
St. Vincent, Minn	24	16	19	9	n. 51 e.	13
Bismarck, N. Dak	24	16	21	16	n. 32 e.	9
Williston, N. Dak	16	19	15	20	s. 59 w.	6
Upper Mississippi Valley.						
St. Paul, Minn	23	14	29	15	n. 60 e.	16
La Crosse, Wis	24	17	15	7	n. 49 e.	11
Davenport, Iowa	19	14	30	13	n. 74 e.	18
Des Moines, Iowa	22	17	23	11	n. 67 e.	13
Keokuk, Iowa	23	19	23	10	n. 73 e.	14
Cairo, Ill	24	20	23	7	n. 76 e.	16
Springfield, Ill	21	18	19	15	n. 53 e.	5
Hannibal, Mo	19	17	25	13	n. 81 e.	12
St. Louis, Mo	24	17	21	14	n. 45 e.	10
Missouri Valley.						
Columbia, Mo	10	7	15	7	n. 69 e.	8
Kansas City, Mo	16	18	28	12	s. 83 e.	16
Springfield, Mo	18	24	24	10	s. 67 e.	15
Omaha, Nebr	22	21	22	10	n. 85 e.	12
Sioux City, Iowa	20	23	25	7	s. 81 e.	18
Pierre, S. Dak	22	12	26	13	n. 52 e.	16
Huron, S. Dak	22	18	23	13	n. 68 e.	11
Northern Slope.						
Havre, Mont	14	14	13	31	w.	18
Miles City, Mont	23	15	15	15	n.	8
Helena, Mont	11	23	4	40	s. 72 w.	38
Rapid City, S. Dak	28	10	8	28	n. 48 w.	27
Cheyenne, Wyo	25	9	5	32	n. 59 w.	31
Lander, Wyo	13	22	9	28	s. 65 w.	21
North Platte, Nebr	16	21	19	24	s. 45 w.	7
Middle Slope.						
Denver, Colo	16	23	17	14	s. 23 e.	8
Pueblo, Colo	27	16	14	19	n. 24 w.	12
Concordia, Kans	19	24	17	9	s. 58 e.	9
Dodge City, Kans	21	24	14	12	s. 34 e.	4
Wichita, Kans	22	20	23	5	n. 84 e.	18
Oklahoma, Okla	22	26	11	10	s. 14 e.	4
Southern Slope.						
Abilene, Tex	18	29	16	12	s. 20 e.	12
Amarillo, Tex	23	28	5	9	s. 39 w.	6
Southern Plateau.						
El Paso, Tex	12	8	17	33	n. 76 w.	16
Santa Fe, N. Mex	15	23	22	20	s. 14 e.	8
Tucson, Ariz	10	22	19	26	s. 30 w.	14
Yuma, Ariz	21	13	11	28	n. 65 w.	19
Independence, Cal	31	10	8	26	n. 41 w.	28
Middle Plateau.						
Carson City, Nev	10	19	9	29	s. 66 w.	22
Winnemucca, Nev	15	20	17	22	s. 45 w.	7
Salt Lake City, Utah	24	16	14	24	n. 51 w.	13
Northern Plateau.						
Baker City, Oreg	16	28	21	17	s. 18 e.	13
Idaho Falls, Idaho	16	28	9	17	s. 34 w.	14
Spokane, Wash	11	31	16	20	s. 11 w.	20
Walla Walla, Wash	8	25	13	20	s. 22 w.	18
North Pacific Coast Region.						
Fort Canby, Wash	22	23	15	13	s. 68 e.	2
Port Angeles, Wash	6	26	9	25	s. 39 w.	26
Seattle, Wash	21	27	11	16	s. 40 w.	8
Tatoosh Island, Wash	3	24	24	24	s.	21
Portland, Oreg	14	27	16	19	s. 13 w.	13
Roseburg, Oreg	23	14	12	21	n. 45 w.	13
Middle Pacific Coast Region.						
Eureka, Cal	15	20	17	21	s. 39 w.	6
Red Bluff, Cal	23	25	13	16	s. 56 w.	4
Sacramento, Cal	16	29	9	20	s. 40 w.	17
San Francisco, Cal	7	10	5	44	s. 86 w.	39
South Pacific Coast Region.						
Fresno, Cal	26	7	5	36	n. 59 w.	36
Los Angeles, Cal	11	11	14	32	w.	18
San Diego, Cal	16	9	10	34	n. 74 w.	25
San Luis Obispo, Cal	30	11	10	27	n. 42 w.	26

TABLE X.—*Thunderstorms and auroras, April, 1895.*

States.	No. of stations.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total. No.	Total. Days.	
Alabama	55	T.	2	3	....	....	....	4	3	....	....	....	....	....	....	1	....	7	....	....	....	....	....	....	1	2	4	6	3	4	....	....	40	12	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Arizona	45	T.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	4	1	....	....	....	1	....	....	....	6	3	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Arkansas	49	T.	1	....	....	1	5	2	....	....	....	....	....	5	....	2	4	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	40	14	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1	....	2	11	2	2	....	1	....	....	0	0	A.
California	214	T.	....	....	....	....	....	....	....	1	1	....	....	....	2	....	....	....	....	....	....	....	....	....	....	1	1	7	2	....	....	....	....	15	7	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Colorado	84	T.	....	....	....	1	....	....	....	....	....	....	....	....	....	1	....	....	....	1	3	7	2	....	....	....	1	8	1	....	6	5	....	36	11	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Connecticut	28	T.	....	....	....	....	....	....	....	1	8	5	....	....	....	....	....	....	....	....	....	....	....	....	....	....	7	2	10	....	....	....	....	33	6	T.
		A.	....	....	....	....	....	....	....	....	....	2	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	4	2	A.
Delaware	7	T.	2	2	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	....	7	4	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Dist. of Columbia	4	T.	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Florida	36	T.	3	11	1	....	1	1	2	2	....	....	....	....	2	....	....	....	12	1	....	....	....	....	2	4	5	7	10	3	4	2	....	73	19	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Georgia	50	T.	2	6	....	....	....	....	7	1	....	....	....	....	2	....	....	9	4	....	....	....	....	....	3	4	6	8	7	5	....	....	64	16	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Idaho	31	T.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	1	1	2	....	....	....	6	4	T.
		A.	....	....	....	....	....	....	....	....	....	....	4	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1	....	....	....	....	....	6	3	A.
Illinois	73	T.	7	....	....	....	5	4	2	....	....	....	5	15	....	....	....	3	....	....	....	2	12	..	....	1	....	5	....	....	....	6	....	67	12	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	1	1	A.
Indiana	48	T.	6	....	....	....	1	1	....	3	....	....	....	10	2	....	....	1	....	..	....	2	1	1	....	....	....	3	....	....	....	1	....	32	12	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Indian Territory	7	T.	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	1	....	....	....	1	....	....	....	....	....	....	3	3	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Iowa	96	T.	1	....	....	....	4	12	....	....	....	....	7	3	....	2	3	1	....	....	1	5	1	1	....	....	5	3	3	5	17	8	....	82	18	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1	A.
Kansas	70	T.	1	....	....	....	8	1	....	1	....	2	1	4	....	4	6	....	....	....	....	5	4	....	....	1	....	....	1	1	4	3	....	47	16	T.
		A.	....	....	....	1	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	3	3	A.
Kentucky	46	T.	5	1	....	....	....	1	1	1	....	....	....	7	6	1	....	2	....	....	....	....	....	....	....	....	....	....	2	1	1	....	....	29	12	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Louisiana	46	T.	4	....	1	....	1	5	1	....	....	....	....	....	....	....	1	....	1	....	....	....	....	3	....	....	1	8	10	1	....	....	....	37	12	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Maine	18	T.	....	....	....	....	....	....	....	....	2	4	....	....	....	....	....	....	....	....	....	1	....	....	....	....	2	....	....	....	....	....	....	9	4	T.
		A.	....	....	....	....	....	....	....	....	....	3	6	....	....	....	....	6	1	1	3	2	1	....	....	....	1	....	1	....	1	....	....	25	10	A.
Maryland	42	T.	3	12	....	....	....	1	....	1	....	....	....	11	6	1	....	....	....	....	....	....	....	3	....	....	....	4	2	....	....	....	....	44	10	T.
		A.	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	1	....	....	....	....	1	....	....	....	....	....	....	....	3	3	A.
Massachusetts	78	T.	....	....	....	....	....	....	....	....	16	3	....	....	....	....	....	....	....	....	....	....	....	1	....	....	26	2	22	1	1	....	....	72	8	T.
		A.	....	....	....	....	....	....	....	....	....	3	3	....	....	....	....	2	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....	10	4	A.
Michigan	86	T.	....	1	....	....	1	....	1	1	1	....	1	2	3	....	....	....	....	....	....	1	1	1	....	2	....	....	....	....	....	....	....	21	13	T.
		A.	....	....	....	....	....	....	....	....	1	2	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	5	....	....	4	3	A.
Minnesota	70	T.	....	....	....	....	1	6	....	....	....	2	15	1	....	....	....	....	....	....	3	2	....	....	1	....	15	10	15	17	5	19	....	112	14	T.
		A.	....	2	....	....	....	....	....	....	1	1	3	1	4	3	....	3	....	....	1	1	....	....	....	1	....	4	....	....	....	....	....	25	12	A.
Mississippi	45	T.	5	....	....	....	....	4	....	....	....	....	....	....	1	3	2	6	....	....	....	....	1	2	2	2	6	9	5	....	....	....	....	48	13	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Missouri	102	T.	5	....	....	1	5	4	1	....	....	....	4	7	....	5	20	6	....	....	1	5	8	....	....	....	3	1	1	....	10	2	....	89	18	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Montana	34	T.	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	3	3	....	....	....	8	4	T.
		A.	....	....	....	....	....	....	....	....	....	....	3	1	1	....	1	1	....	....	....	....	....	....	1	....	....	1	2	....	....	....	....	11	8	A.
Nebraska	116	T.	....	....	....	6	3	1	....	....	1	6	....	....	4	7	1	....	1	....	5	3	....	....	....	1	1	5	12	15	11	....	83	17	T.
		A.	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	2	2	A.
Nevada	50	T.	....	....	....	....	....	....	....	....	....	....	1	....	....	3	....	....	....	....	....	....	....	....	....	2	6	....	1	5	....	....	....	17	5	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	2	2	A.
New Hampshire	22	T.	....	1	....	....	....	....	....	....	5	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	1	....	....	8	4	T.
		A.	....	....	1	....	....	....	....	....	....	2	....	....	....	....	2	5	2	....	6	1	....	....	....	....	....	....	1	1	1	....	....	21	9	A.
New Jersey	55	T.	1	2	....	1	....	....	1	24	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	30	6	T.
		A.	....	....	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	1	A.
New Mexico	29	T.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	2	1	....	....	....	....	....	....	....	....	....	....	4	3	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
New York	84	T.	....	....	....	....	1	....	....	....	5	....	....	....	....	....	....	....	....	....	1	....	1	....	....	4	3	2	....	....	....	....	....	17	7	T.
		A.	....	....	....	....	....	....	....	....	....	6	2	....	....	....	....	....	2	1	3	....	....	....	....	....	....	....	....	....	....	....	....	14	5	A.
North Carolina	55	T.	2	6	1	....	....	....	5	4	....	....	....	11	7	....	....	....	2	1	....	....	6	4	1	....	6	7	....	1	1	....	65	16	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
North Dakota	37	T.	....	....	....	....	2	1	....	1	....	....	1	....	....	1	....	1	....	....	1	....	....	....	....	....	....	2	1	....	....	....	....	11	9	T.
		A.	....	....	....	....	....	....	....	....	....	....	7	6	4	1	2	2	....	....	1	3	1	....	....	1	2	....	....	....	....	....	....	30	11	A.
Ohio	146	T.	9	....	....	....	....	....	25	2	1	....	2	35	23	....	1	....	....	....	....	....	3	....	....	1	....	10	4	....	....	....	....	116	12	T.
		A.	....	....	....	....	....	....	....	....	1	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	2	A.
Oklahoma	19	T.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1	....	....	....	....	....	....	....	....	5	....	....	7	3	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Oregon	62	T.	....	....	....	....	....	....	....	5	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	2	....	....	....	....	....	9	3	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	1	1	A.
Pennsylvania	84	T.	1	....	....	....	....	....	....	4	....	....	....	2	....	....	....	....	....	....	....	....	1	....	....	3	1	5	....	1	....	....	18	8	T.
		A.	....	....	....	....	....	....	....	....	1	1	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	3	3	A.
Rhode Island	8	T.	....	....	....	....	....	....	....	....	2	....	....	....	....	1	....	....	....	....	....	....	....	....	....	3	....	5	....	....	....	....	....	11	4	T.
		A.	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1	A.
South Carolina	40	T.	1	10	1	....	....	1	7	1	....	....	....	....	....	1	8	8	....	....	....	....	....	....	2	7	3	10	7	3	....	....	....	70	15	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
South Dakota	43	T.	....	....	....	....	1	4	....	....	....	1	2	....	....	1	2	....	....	....	....	....	....	....	....	....	1	2	3	6	2	10	....	35	12	T.
		A.	....	....	....	....	....	....	....	....	....	....	5	2	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	8	3	A.
Tennessee	39	T.	6	3	....	....	....	4	2	....	....	....	6	4	....	1	13	1	....	....	....	....	4	....	....	7	3	2	4	3	4	....	....	67	16	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Texas	81	T.	....	....	....	....	6	....	....	....	....	....	3	1	....	....	....	....	....	....	2	4	4	7	14	6	9	2	....	2	5	....	....	65	13	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Utah	33	T.	....	....	....	....	....	....	....	....	1	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	1	2	3	....	....	....	8	5	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	....	....	....	....	....	0	0	A.
Vermont	15	T.	....	....	....	....	....	....	....	5	....	2	1	....	....	....	2	1	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	9	3	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Virginia	42	T.	4	3	....	....	....	1	2	1	....	....	....	4	4	....	....	....	1	....	....	....	5	....	....	....	4	4	....	....	....	....	....	33	11	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Washington	49	T.	....	....	....	....	....	....	....	16	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	18	2	T.
		A.	....	....	....	....	....	....	....	....	....	3	2	1	1	....	....	....	....	....	....	....	....	....	....	....	3	....	....	....	....	....	....	11	6	A.
West Virginia	45	T.	12	8	....	....	....	2	....	....	....	....	....	15	....	....	....	....	....	....	....	1	....	....	....	....	....	2	1	....	....	....	....	39	7	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Wisconsin	69	T.	1	....	..	....	1	2	4	....	....	....	6	6	2	....	....	....	....	....	....	....	....	....	2	1	....	....	1	1	5	....	32	12	T.
		A.	1	....	1	1	....	....	....	....	1	....	3	3	2	1	4	1	....	....	....	....	1	....	1	1	....	1	....	....	....	....	....	22	14	A.
Wyoming	12	T.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	1	1	....	....	3	3	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Sums	2,699	T.	84	69	4	4	49	61	65	24	94	23	50	104	91	46	51	60	29	5	10	42	45	34	28	47	127	137	162	79	78	94	....	1796	....	T.
		A.	1	2	2	2	0	0	0	0	2	23	47	16	15	7	6	25	8	2	19	8	2	2	1	3	4	11	4	2	1	3	....	218	....	A.

TABLE XI.—*Hourly sunshine as deduced from sunshine recorders, April, 1895.*

Stations.	Instrument.	Percentages for each hour of local mean time ending with the respective hour.																Monthly summary.			
		A. M.								P. M.								Instrumental record.			
		5	6	7	8	9	10	11	Noon.	1	2	3	4	5	6	7	8	Actual.	Possible.	Per cent of possible.	Personal estimate.
																		Hours.	*Hours.*		
Atlanta, Ga	T.	.....	37	43	51	65	75	79	82	84	89	86	91	68	59	45	.....	274.3	390.7	70	48
Baltimore, Md	T.	.....	42	47	64	72	78	80	84	87	81	75	70	60	51	37	.....	229.5	397.3	68	48
Bismarck, N. Dak	P.	44	34	37	34	42	45	42	34	52	55	57	56	47	36	33	17	177.1	407.8	43	51
Boston, Mass	T.	0	40	44	42	53	55	61	59	64	62	56	48	47	37	29	.....	202.5	401.6	50	36
Buffalo, N. Y	T.	20	27	33	47	53	58	69	65	69	61	59	56	52	37	22	.....	208.6	402.3	52	42
Chicago, Ill	T.	0	40	53	65	72	80	81	86	80	81	81	70	59	40	44	.....	271.3	400.6	68	56
Cincinnati, Ohio	P.	.....	64	60	59	62	69	75	67	58	57	64	60	60	62	65	.....	248.6	397.1	63	51
Cleveland, Ohio	P.	100	54	54	56	64	64	66	65	71	71	66	59	55	43	30	.....	237.3	400.0	59	51
Columbus, Ohio	T.	.....	53	57	69	80	86	85	85	92	90	81	71	60	41	32	.....	286.0	398.2	72	45
Denver, Colo	P.	.....	66	73	76	78	82	83	79	66	63	68	61	58	55	48	.....	274.0	398.0	69	55
Des Moines, Iowa	T.	.....	69	68	65	63	66	68	72	76	66	64	58	48	45	43	.....	250.0	400.5	62	50
Detroit, Mich	T.	100	37	45	67	74	79	84	84	85	84	83	68	54	41	37	.....	270.0	401.4	67	56
Dodge City, Kans	P.	.....	66	68	70	77	80	75	75	67	66	65	59	63	55	45	.....	265.7	395.5	67	61
Eastport, Me	P.	20	45	43	49	55	57	60	58	56	57	59	58	58	49	44	50	217.6	405.0	54	38
Galveston, Tex	P.	.....	58	69	79	82	80	87	87	89	85	89	93	89	73	42	.....	314.0	396.7	81	81
Helena, Mont	P.	22	62	62	68	71	71	72	69	68	72	71	65	68	62	59	7	273.9	407.9	67	60
Kansas City, Mo	P.	.....	47	51	64	68	70	72	70	63	66	60	57	55	34	48	.....	236.4	396.8	60	51
Key West, Fla	T.	.....	75	67	74	79	88	94	95	94	92	87	87	83	68	63	.....	317.1	382.2	83	69
Little Rock, Ark	T.	.....	57	53	57	72	70	68	70	75	73	64	58	44	36	37	.....	237.0	392.3	60	51
Louisville, Ky	T.	.....	59	53	53	58	65	69	75	70	65	62	56	55	50	54	.....	240.2	396.0	61	48
Marquette, Mich	T.	0	13	48	55	64	76	78	80	84	87	88	85	77	56	27	0	273.2	407.9	67	39
Memphis, Tenn	P.	.....	59	57	62	66	73	73	69	59	71	74	77	58	35	23	.....	345.1	392.6	62	56
New Haven, Conn	T.	.....	36	43	47	56	66	68	61	60	57	59	45	36	30	26	.....	201.0	400.0	50	46
New Orleans, La	T.	.....	42	47	66	69	71	69	67	76	76	75	66	65	52	50	.....	251.6	387.3	65	64
New York, N. Y	T.	.....	30	36	47	54	58	63	63	64	66	60	44	44	28	18	.....	197.3	399.9	49	41
Norfolk, Va	T.	.....	52	55	71	76	77	79	79	83	81	76	68	66	47	41	.....	273.0	395.0	69	67
Philadelphia, Pa	T.	.....	48	52	53	58	61	69	70	71	70	66	54	46	43	40	.....	229.8	398.3	58	41
Portland, Me	T.	0	23	48	50	64	72	73	78	77	75	74	70	58	45	22	.....	245.3	402.7	61	38
Portland, Oreg	T.	33	34	29	47	66	78	77	73	69	74	69	55	44	35	38	0	230.7	406.4	57	45
Do	P.	33	34	32	55	67	72	73	64	64	70	66	55	52	44	38	0	230.8	406.4	57	45
Rochester, N. Y	T.	100	51	43	48	61	63	67	80	76	77	71	64	55	50	43	.....	246.9	402.2	61	55
St. Louis, Mo	T.	.....	53	50	59	64	73	87	88	84	83	81	82	75	58	40	.....	282.8	396.6	71	56
Salt Lake City, Utah	T.	.....	64	66	78	82	92	93	88	88	79	77	69	60	51	40	.....	297.5	399.1	75	61
Do	P.	.....	64	74	81	86	94	92	84	84	77	76	69	64	56	41	.....	301.0	399.1	75	61
San Diego, Cal	P.	.....	23	31	37	43	55	62	70	76	77	77	69	65	54	41	.....	224.3	390.1	57	58
San Francisco, Cal	T.	.....	33	46	66	81	90	92	95	96	91	91	89	80	69	45	.....	309.6	395.4	78	60
Santa Fe, N. Mex	P.	.....	78	81	87	87	87	89	86	83	82	81	73	72	65	59	.....	314.9	393.1	80	66
Savannah, Ga	P.	.....	42	50	61	61	65	70	66	59	64	59	62	64	50	47	.....	232.7	389.3	60	54
Seattle, Wash	T.	23	26	21	26	35	58	67	75	75	64	63	49	34	17	16	22	185.4	409.6	45	31
Spokane, Wash	P.	69	50	54	73	75	72	76	69	66	66	62	63	56	48	37	33	255.8	409.6	62	31
Tucson, Ariz	P.	.....	95	90	92	93	93	96	97	95	93	95	95	88	87	82	.....	360.6	390.2	92	77
Vicksburg, Miss	T.	.....	65	62	65	81	90	88	87	90	91	88	86	84	73	68	.....	315.0	389.9	81	78
Washington, D. C	P.	.....	36	39	52	61	64	58	56	58	54	61	54	45	38	29	.....	204.4	396.8	52	44
Wilmington, N. C	T.	.....	34	37	44	54	54	55	51	55	50	46	38	35	16	12	.....	167.7	391.9	43	48

TABLE XII.—*Hourly precipitation, April, 1895.*

Stations.	1 a. m.	2 a. m.	3 a. m.	4 a. m.	5 a. m.	6 a. m.	7 a. m.	8 a. m.	9 a. m.	10 a. m.	11 a. m.	Noon.	1 p. m.	2 p. m.	3 p. m.	4 p. m.	5 p. m.	6 p. m.	7 p. m.	8 p. m.	9 p. m.	10 p. m.	11 p. m.	Midnight.	Total.
Atlanta, Ga	0.14	0.13	0.08	0.15	0.19	0.47	0.37	0.50	0.03	0.06	0.34	0.06	0.03	T.	0.08	0.18	0.04	T.	0.00	0.22	0.75	0.58	0.56	0.22	5.18
Baltimore, Md.*	0.13	0.19	0.08	0.09	0.17	0.25	0.30	0.50	0.22	0.37	0.38	0.22	0.30	0.57	0.24	0.44	0 66	0.50	0.30	0.26	0.20	0.26	0.21	0.17	7.45
Bismarck, N. Dak	0.10	0.23	0.09	0.00	0.00	0.00	0.02	0.30	0.49	0.10	0.18	0.13	0.04	0.03	0.04	0.05	0.07	0.06	0.08	0.10	0.07	0.03	0.09	0.21	2.56
Boston, Mass	0.05	0.11	0.16	0.12	0.33	0.27	0.26	0.22	0.39	0.13	0.06	0.14	0.30	0.27	0.17	0.01	0.02	0.02	0.06	0.16	0.13	0.03	0.11	0.03	3.55
Buffalo, N. Y	0.02	0.10	0.07	0.17	0.18	0.21	0.15	0.07	0.05	0.10	0.05	0.10	0.05	0.03	0.10	0.10	0.04	0.06	0.14	0.06	0.03	0.02	0.01	0.01	1.92
Cincinnati, Ohio	0.28	0.22	0.06	0.03	0.12	0.09	0.02	T.	0.07	0.01	0.06	0.05	0.36	0.76	0.02	T.	T.	0.02	0.01	0.02	0 04	0.03	0.08	0.25	2.60
Cleveland, Ohio	0.04	0.16	0.19	0.13	0.09	0.03	0.01	T.	0.06	0.06	0.02	0.08	0.02	0.04	0.10	0.09	T.	T.	T.	0.13	0.08	T.	T.	0.01	1.37
Denver, Colo.*	0.05	0.04	0.03	0.05	0.03	0.05	0.06	0.04	0.14	0.12	0.14	0.13	0.02	0.04	0.02	0.05	0.04	T.	T.	0.04	0.01	0.01	0.01	0.05	1.19
Detroit, Mich	0.02	0.02	0.01	0.02	0.07	0.02	0.03	0.02	0.04	0.04	0.10	0.12	0.11	0.12	0.11	0.05	0.03	0.02	0.05	0.05	0.06	0.10	0.04	0.01	1.26
Dodge City, Kans.*	T.	T.	T.	T.	T.	T.	0.02	0.02	0.08	0.05	0.04	0.01	T.	0.03	0.03	0.02	0.01	T.	T.	0.12	0.19	0.01	T.	T.	1.09
Duluth, Minn	0.02	T.	T.	T.	T.	T.	T.	0.13	0.01	0.01	T.	0.02	0.01	0.01	0.01	0.01	0.02	0.04	0.23	0.14	0.07	0.04	0.03	0.03	0.83
Eastport, Me	0.05	0.07	0.09	0.09	0.11	0.14	0.22	0.05	0.04	0.04	0.04	0.05	0.06	0.06	0.12	0.15	0.19	0.07	0.17	0.21	0.08	0.08	0.05	0.03	2.26
Galveston, Tex	0.00	0.00	0.00	0.12	0.05	T.	T.	0.10	0.01	T.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.04	0.37
Indianapolis, Ind	0.36	0.16	0.01	0.01	0.03	0.02	0.05	0.17	0.09	T.	0.02	0.04	T.	0.01	0.07	0.06	0.13	0.01	0.04	0.11	0.12	0.22	0.16	0.06	1.95
Jacksonville, Fla	0.00	0.00	0.01	0.08	0.05	0.38	0.36	0.17	0.03	0.04	T.	0.06	0.75	0.50	0.12	0.07	0.21	0.29	0.70	0.09	0.12	0.21	0.10	0.04	4.38
Jupiter, Fla	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.04	0.09	0.07	0.08	0.36	0.51	0.34	0.17	0.71	0.08	0.11	0.83	0.22	0.18	T.	0.00	0.00	3.99
Kansas City, Mo	0.17	0.03	0.01	0.01	T.	T.	T.	T.	T.	0.02	0.03	0.02	0.03	0.05	0.12	0.02	T.	0.01	0.01	0.16	0.26	0.08	0.08	0.09	1.15
Key West, Fla	0.21	0.21	0.16	0.07	0.00	0.00	0.02	T.	T.	T.	0.00	0.00	0.00	T.	0.04	0.12	0.05	0.06	T.	0.31	0.17	0.21	0.10	0.09	1.87
Little Rock, Ark	0.08	0.03	0.04	0.07	0.13	0.05	0.00	0.00	0.03	0.00	0.00	0.01	0.02	0.00	T.	0.00	0.02	0.29	0.23	0.11	T.	0.04	0.19	0.13	1.47
Louisville, Ky	0.01	0.07	0.05	0.01	0.08	0.09	0.21	0.18	0.54	0.29	0.06	0.06	0.03	0.33	0.14	0.22	0.17	0.06	0.02	0.02	0.04	0.16	0.04	0.03	2.91
Memphis, Tenn	0.02	0.06	0.17	0.14	0.08	0.39	0.12	0.07	0.09	0.05	0.05	0.02	0.05	0.05	0.07	0.06	0.07	0.01	0.40	0.05	0.05	0.03	0.20	0.02	2.32
Milwaukee, Wis	0.01	0.01	0.02	0.02	0.03	0.13	0.15	0.17	0.05	0.09	0.10	0.07	0.02	0.06	0.08	0.02	0.08	0.01	0.06	0.04	0.01	0.01	0.01	0.01	1.32
Nantucket, Mass	0.06	0.06	0.26	0.10	0.05	0.07	0.06	0.06	0.18	0.18	0.30	0.03	0.11	0.15	0.05	0.10	0.06	0.10	0.10	0.03	0.03	0.08	0.15	0.14	2.51
Nashville, Tenn	0.12	T.	T.	T.	T.	T.	0.01	0.16	0.21	0.32	0.03	0.04	0.05	0.01	0.10	0.28	0.09	0.07	0.23	0.09	0.48	0.17	0.31	0.25	3.04
New Orleans, La	0.06	0.01	1.16	0.11	0.00	0.00	0.10	0.14	0.12	0.13	0.15	0.10	0.10	0.07	0.20	0.06	0.02	T.	0.00	T.	T.	T.	0.05	T.	2.58
New York, N. Y	0.12	0.13	0.12	0.04	0.04	0.06	0.04	0.06	0.06	0.20	0.11	0.07	0.13	0.12	0.18	0.28	0.20	0.14	0.10	0.05	0.08	0.10	0.11	0.21	2.75
Norfolk, Va	0.21	0.11	0.29	0.07	0.41	0.21	0.33	1.11	0.67	0.18	0.03	0.21	0.04	0.03	0.11	0.24	0.41	0.52	0.26	0.08	0.06	0.05	0.14	0.16	5.95
Omaha, Nebr.*	0.08	0.08	0.15	0.05	0.70	0.77	0.21	0.09	0.09	0.13	0.08	0.07	0.05	0.04	0.16	0.10	0.05	0.03	0.04	0.04	0.20	0.16	0.13	0.06	3.59
Philadelphia, Pa	0.03	0.03	0.03	0.03	0.04	0.05	0.08	0.08	0.10	0.20	0.25	0.80	0.49	0.36	0.35	0.53	0.64	0.13	0.18	0.12	0.14	0.19	0.37	0.10	5.36
Pittsburg, Pa	0.04	0.03	0.09	0.04	0.03	0.10	0.07	0.14	0.07	0.09	0.11	0.04	0.06	0.04	0.04	0.04	0.05	0.05	0.04	0.32	0.10	0.12	0.10	0.11	1.83
Portland, Me	0.35	0.41	0.06	0.07	0.12	0.29	0.33	0.28	0.16	0.20	0.25	0.08	0.12	0.30	0.22	0.19	0.22	0.20	0.21	0.28	0.27	0.33	0.49	0.52	5.95
Portland, Oreg. *a*	0.10	0.19	0.09	0.13	0.05	0.01	T.	0.08	0.08	0.08	0.04	0.01	0.05	0.10	0.34	0.14	0.07	0.04	0.14	0.16	0.14	0.04	0.05	0.07	2.28
Portland, Oreg. *b*	0.06	0.13	0.06	0.12	0.05	0.01	T.	0.08	0.08	0.03	0.03	0.02	0.04	0.10	0.30	0.10	0.07	0.03	0.10	0.11	0.11	0.04	0.03	0.06	1.84
Rochester, N. Y	0.01	0.01	0.05	0.03	0.03	0.06	0.04	0.16	0.08	0.26	0.21	0.12	0.07	0.13	0.14	0.06	0.09	0.08	0.10	0.10	0.12	0.04	0.01	0.04	2.04
St. Louis, Mo	0.02	0.01	T.	0.01	0.06	0.02	0.02	T.	T.	0.06	0.01	T.	T.	0.01	T.	T.	0.01	T.	T.	0.12	T.	0.01	0.01	0.03	0.40
St. Paul, Minn	0.03	0.25	0.22	0.32	0.06	0.02	0.03	0.01	T.	0.13	0.04	T.	0.01	0.06	0.11	0.10	0.04	0.15	0.02	0.20	0.03	0.12	0.11	0.01	2.07
Salt Lake City, Utah	T.	0.01	T.	0.01	T.	0.01	0.03	0.06	0.01	0.01	0.10	0.09	0.05	0.04	0.04	0.05	0.04	0.01	0.06	0.03	0.01	0.01	0.01	0.01	0.70
San Diego, Cal	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.05	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11
San Francisco, Cal	0.00	0.00	0.06	0.04	0.06	0.12	0.23	0.00	0.00	T.	0.01	T.	0.02	0.05	0.04	0.01	0.01	0.08	0.23	0.18	0.01	0.07	T.	0.00	1.32
Savannah, Ga	T.	0.03	0.00	0.18	0.65	0.60	0.42	0.22	0.08	0.02	0.03	0.03	0.05	0.62	0.63	0.08	0.05	0.01	0.11	0.05	0.29	0.11	0.02	0.14	4.43
Seattle, Wash	0.15	0.22	0.25	0.09	0.08	0.04	0.03	0.13	0.06	0.04	0.02	0.06	0.17	0.18	0.09	0.11	0.10	0.19	0.08	0.13	0.26	0.28	0.13	0.18	5.07
Vicksburg, Miss	0.00	0.00	0.00	0.01	0.04	0.03	0.23	0.23	0.02	T.	0.00	T.	T.	0.00	T.	T.	T.	T.	0.00	0.08	0.05	0.23	0.20	0.11	1.25
Washington, D. C	0.21	0.30	0.27	0.46	0.34	0.41	0.29	0.15	0.07	0.54	0.30	0.27	0.19	0.27	0.24	0.16	0.23	0.52	0.15	0.13	0.11	0.16	0.10	0.11	5.98
Wilmington, N. C	0.52	0.12	0.16	0.08	0.22	0.33	0.76	0.21	0.16	0.12	0.10	0.42	0.28	0.36	0.44	0.17	0.17	0.31	0.42	0.42	0.10	0.04	0.12	0.53	6.56

* Record incomplete. *a* Weighing gauge. *b* Float gauge.

TABLE XIII.—*Excessive precipitation, by stations, for April, 1895.*

Stations.	Monthly rainfall 10 inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall of 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
Alabama.	*Inches.*	*Inches.*		*Ins.*	*h. m.*	
Brewton		2.50	6			
Evergreen		3.60	7			
Maple Grove		2.75	5			
Marion				1.20	1 00	16
Mount Willing		3.13	7			
Starlington		4.00	5			
Arkansas.						
Camden *a*				1.26	0 40	25-26
Kirby				2.00	1 00	25
California.						
Grass Valley		2.50	27			
Iowa Hill		2.68	26-27			
Mariposa		2.55	27			
Malakoff Mine		3.95	26-27			
Florida.						
Earnestville		2.61	7-8			
Fort Meade		3.40	27			
Grasmere		2.51	2			
Homeland				1.09	1 00	7
Hypoluxo				1.20	1 00	2
New Smyrna				1.07	0 30	17
Pensacola		3.40	25			
Plant City		3.60	2			
Tampa		2.70	2			
Georgia.						
Augusta		2.71	7-8			
Brag		3.55	7-8			
Clayton	10.40	5.08	7			
Dahlonega		2.52	7			
Diamond		2.87	7			
Fleming		2.68	24			
Hephzibah		2.90	7			
Marshallville		3.28	7	3.00	3 00	7
Savannah				1.00	1 00	24
Toccoa		2.67	8			
Iowa.						
Centerville		3.20	15			
Garden Grove				1.51	1 00	16
Kansas.						
Wamego		2.50	5	2.50	2 00	5
Kentucky.						
Paducah *b*		2.64	16			
Louisiana.						
Farmerville		2.58	22			
Franklin		4.52	27			
Houma		6.55	26-27			
New Orleans				1.16	1 00	2
Port Eads		4.18	26-27			
Maine.						
Cornish		3.14	14			
North Bridgeton		2.84	14-15			
Portland		2.85	14-15			
Maryland.						
Charlotte Hall		3.67	8			
Fallston		2.75	8			
Jewell		3.00	8			
Popes Creek		2.80	6-7			
Pocomoke City				1.59	0 40	27
Massachusetts.						
Ashland		2.69	13-14			
Hobbs Brook		2.63	13-14			
Leeds		2.91	8-9			
Mansfield		2.93	13-14			
Natick		4.25	13-14			
Mississippi.						
Aberdeen		2.60	16-17			
Do		2.75	25-26			
Biloxi		4.00	27	4.00	1 30	27
Corinth				2.11	2 00	16
Duck Hill		3.90	24			
French Camps				1.50	1 05	26
Leakesville		4.25	25			
Mayersville		2.62	27	2.62	2 30	27
Palo Alto		2.81	25-26			
Topton				1.02	0 50	16
Missouri.						
East Lynne		2.67	16			
Eight Mile		2.67	15-16			
Gordonville		2.88	16			
Nebraska.						
Culbertson				1.12	0 30	27
Fontanelle		2.64	29			
Hay Springs		3.70	29	3.10	1 00	29
Hickman				2.42	1 40	29
Omaha				1.15	1 00	29
O'Neill		3.35	30			
Schuyler		2.80	29			
Sutton				1.19	1 05	30
Wilsonville				2.00	0 35	27
New Hampshire.						
Belmont		2.84	13-14			
Berlin Mills		4.10	13-14			
Lakeport		2.85	13-14			
North Conway	10.08	6.25	13-15			
Plymouth		2.82	13-14			
Weirs Bridge		2.83	13-14			
Wolfboro		3.66	13-14			
New Jersey.						
Boonton		2.92	8-9			
Charlottesburg		3.30	8-9			
Junction		5.38	8-9	2.10	2 00	9

TABLE XIII.—*Excessive precipitation*—Continued.

Stations.	Monthly rainfall 10 inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall of 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
New Jersey—Continued.	*Inches.*	*Inches.*		*Ins.*	*h. m.*	
Lambertville		2.60	8-9			
Paterson		2.51	8			
New York.						
Bedford		3.79	8-9			
Glens Falls		2.54	8			
West Point		3.55	8-9			
North Carolina.						
Asheville		3.55	7-8			
Chapel Hill	11.42	5.37	7-8			
Fair Bluff		3.13	16-17			
Falkland		3.05	7-8			
Do		2.51	29			
Greenville		2.75	7-8			
Do		3.04	17			
Henderson	14.60	6.51	7-8	5.50	3 00	8
Do		3.00	28			
Highlands	14.84	7.00	6-7			
Horse Cove	10.92	4.20	6-7			
Linville		5.20	7-8			
Lumberton		3.12	17-18			
Lynn		3.10	7			
Moncure	10.74	3.67	7-8			
Newbern	10.20					
Pittsboro	13.40	5.80	7-8			
Sloan		2.64	29			
Southport		2.50	29			
Wilmington		2.72	28-29			
North Dakota.						
Devils Lake		3.99	27			
White Earth		2.50	6			
Ohio.						
Bellefontaine		2.59	6-7			
Columbus		3.33	7-8			
Westerville		2.56	6-7			
Oregon.						
Glenora	12.09	3.00	3			
Langlois	11.06					
Pennsylvania.						
Forks of Neshaminy		2.54	7-8			
Hamburg		2.60	8			
Philadelphia (W. B.)		2.77	8-9			
Point Pleasant		2.88	8			
Seisholtzville		3.11	8			
Swarthmore		3.00	8-9			
Rhode Island.						
Block Island		2.68	13-14			
Bristol		3.24	13-14			
Kingston		2.88	13-14			
Lonsdale		3.71	13-14			
Narragansett Pier		3.22	13-14			
Pawtucket		3.69	13-14			
Providence *a*		3.66	13-14			
South Carolina.						
Conway		3.10	7-8			
Effingham		2.75	7-8			
Florence		2.68	16-17			
Little Mountain		2.64	7			
Statesburg		3.75	28			
South Dakota.						
Aberdeen		2.50	29			
Ipswich		2.98	15			
Tennessee.						
Carthage		4.42	16-17			
Florence		2.53	16			
Franklin		3.00	16			
Texas.						
Estelle				1.56	1 00	21
Flower Bluff		3.73	24-25			
Forestburg				1.50	0 20	21
Lampasas		3.75	25			
Roby		2.50	29			
Waco		2.50	24			
Utah.						
Levan		5.20	28-30			
Vermont.						
Norwich		2.70	13-14			
Virginia.						
Ashland		3.00	8			
Avon		2.75	7-8			
Callaville		3.70	8			
Clarksville		3.06	26-27			
Grahams Forge		2.62	7			
Monterey		2.95	7			
Nottoway		3.01	8			
Petersburg		3.99	7-8			
Richmond *b*		3.82	8-9			
Washington.						
East Clallam	10.38					
Neah Bay	11.11					
South Bend	11.39					
West Virginia.						
Bluefield		2.59	7			
Cloverdale		2.75	7			
Elkhorn		2.90	7			
Green Sulphur		2.50	7			
Wyoming.						
Lander		4.83	28-30			
Lander (W. B.)		5.38	29-30			
Fort Washakie		3.20	21			
Do		4.05	29-30			

TABLE XIV.—*Maximum rainfall in one hour or less, April*, 1895.

Stations.	Maximum rainfall in—					
	5 min.	Date.	10 min.	Date.	1 hour.	Date.
	Inch.		*Inch.*		*Inch.*	
Atlanta, Ga.	0.15	7	0.24	7	0.51	7
Baltimore, Md.*	0.12	27	0.19	27	0.36	27
Bismarck, N. Dak.	0.10	30	0.15	30	0.53	30
Boston, Mass.	0.05	9,14	0.08	9	0.36	9
Buffalo, N. Y.	0.03	8,22	0.06	8	0.19	22
Chicago, Ill.*						
Cincinnati, Ohio	0.20	1	0.34	1	0.75	1
Cleveland, Ohio	0.03	12	0.06	12	0.16	22
Denver, Colo.*						
Detroit, Mich	0.02	7	0.04	7	0.15	7
Dodge City, Kans.*	0.10	30	0.12	30	0.30	30
Duluth, Minn	0.06	28	0.08	28	0.18	28
Eastport, Me	0.04	23	0.06	23	0.13	23
Galveston, Tex.	0.05	27	0.07	27	0.12	27
Indianapolis, Ind	0.08	21	0.10	21	0.26	8
Jacksonville, Fla	0.21	29	0.38	27	0.72	27
Jupiter, Fla	0.26	30	0.41	2	0.80	29
Kansas City, Mo	0.03	15	0.05	15	0.21	15
Key West, Fla.	0.11	8	0.15	8	0.16	8
Little Rock, Ark.	0.14	25	0.17	25	0.30	25
Louisville, Ky.	0.19	1	0.21	1	0.35	16
Marquette, Mich.*						
Memphis, Tenn.	0.25	25	0.35	25	0.40	25

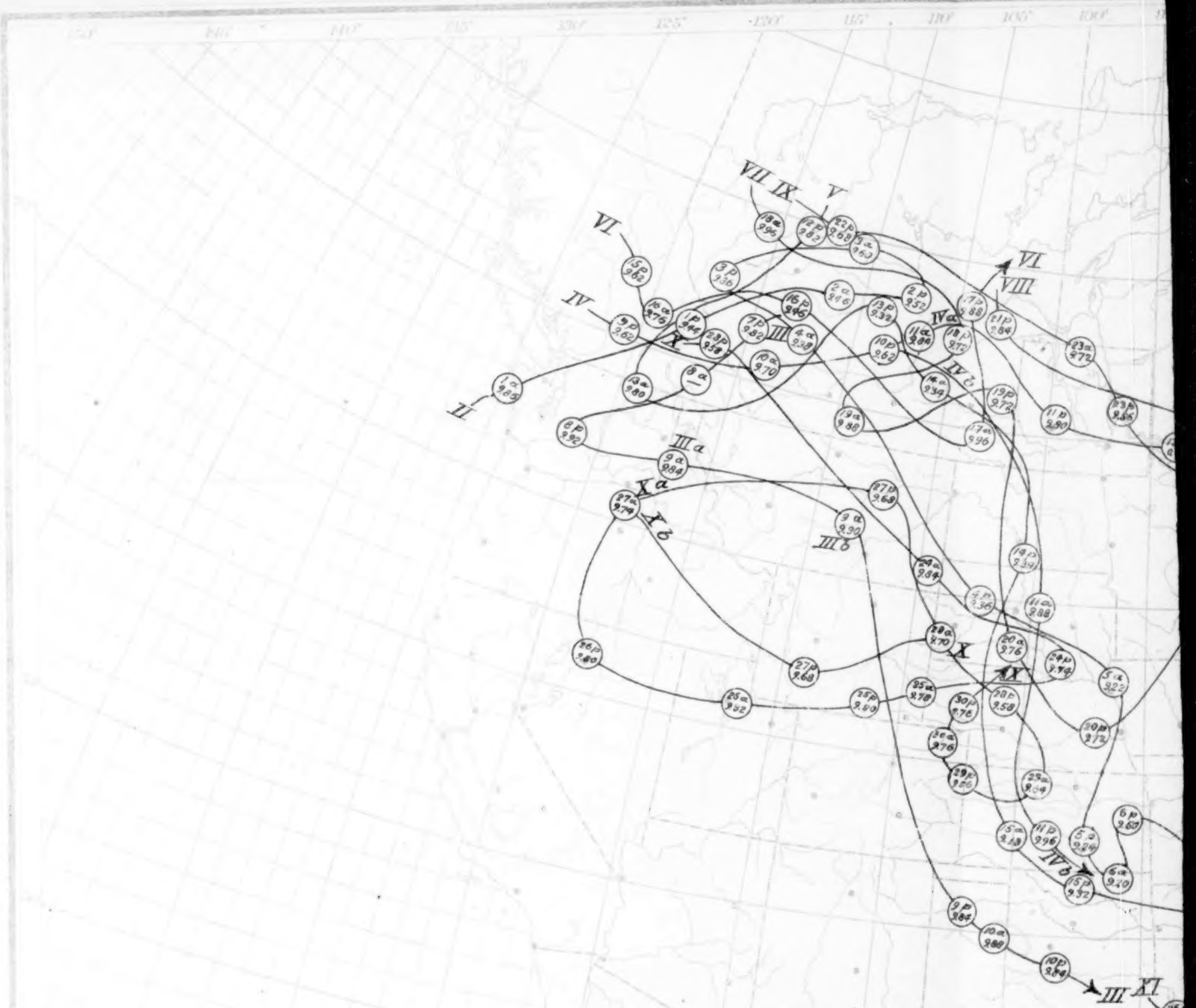
TABLE XIV.—*Maximum rainfall*—Continued.

Stations.	Maximum rainfall in—					
	5 min.	Date.	10 min.	Date.	1 hour.	Date.
	Inch.		*Inch.*		*Inch.*	
Milwaukee, Wis	0.05	8	0.08	8	0.19	8
Nantucket, Mass	0.15	3	0.17	3	0.19	3
Nashville, Tenn.	0.23	16	0.35	16	0.47	16
New Orleans, La.	0.40	2	0.55	2	1.23	2
New York, N. Y.	0.03	1	0.04	1	0.15	1
Norfolk, Va.	0.23	28	0.30	28	0.89	28
Omaha, Nebr.*	0.20	29	0.33	29	1.15	29
Philadelphia, Pa.	0.24	9	0.36	9	0.72	8
Pittsburg, Pa	0.03	12	0.05	12	0.22	12
Portland, Me.	0.14	10	0.21	10	0.37	10
Portland, Oreg.	0.05	16	0.06	16	0.24	3
Rochester, N. Y.	0.03	9	0.06	9	0.20	9
St. Louis, Mo.*	0.02	6	0.03	6	0.11	26
St. Paul, Minn.	0.16	11	0.19	11	0.30	11
Salt Lake City, Utah	0.01	30	0.02	30	0.10	30
San Diego, Cal.†						
San Francisco, Cal.	0.12	27	0.17	27	0.23	27
Savannah, Ga.	0.23	24	0.35	24	1.00	24
Seattle, Wash.	0.06	9	0.12	9	0.25	9
Vicksburg, Miss.	0.15	6	0.20	6	0.43	6
Washington, D. C.	0.19	27	0.26	27	0.59	27
Wilmington, N. C.	0.20	28	0.25	28	0.72	28–29

*Record incomplete.

†Less than 0.05 in one hour.

Chart I. Tracks of Ce



NOTES.

The roman letters show number and order of centers of low areas. The figures within the circles show the days of the month; the letters *a* and *p* indicate, respectively, the 8 a. m. and 8 p. m., seventy-fifth meridian time, observations.

The queries (?) on the tracks show that the centers could not be satisfactorily located.

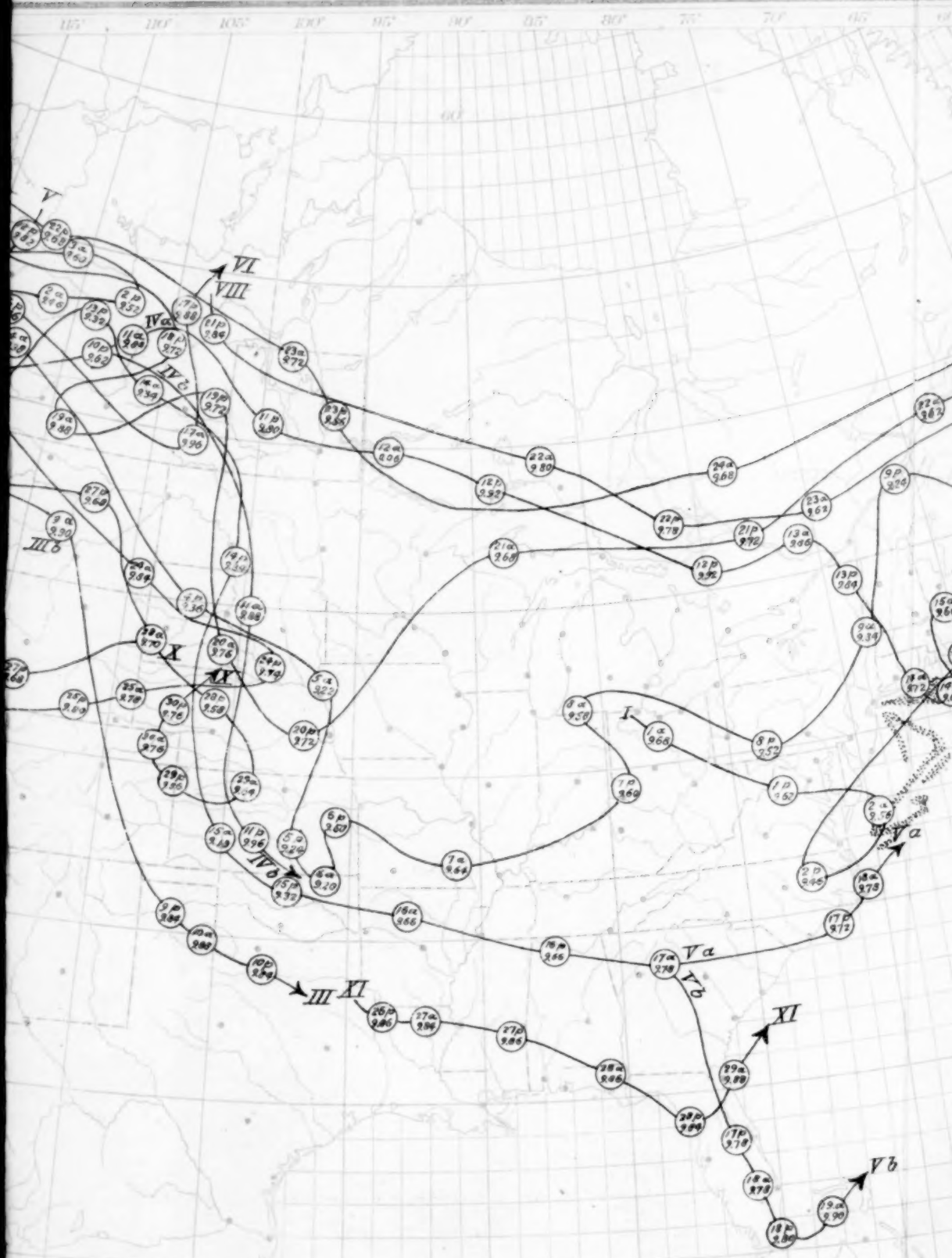
Within each circle is given the lowest barometric reading reported near the center. A blank indicates that no reports were available.

A wavy line indicates the axis of a trough or long oval area of low pressure.

The dotted shading (······) indicates fog belts.

The crosses (× × × × ×) indicate the position in which field ice or icebergs were observed.

Chart I. Tracks of Centers of Low Areas. April, 1895.



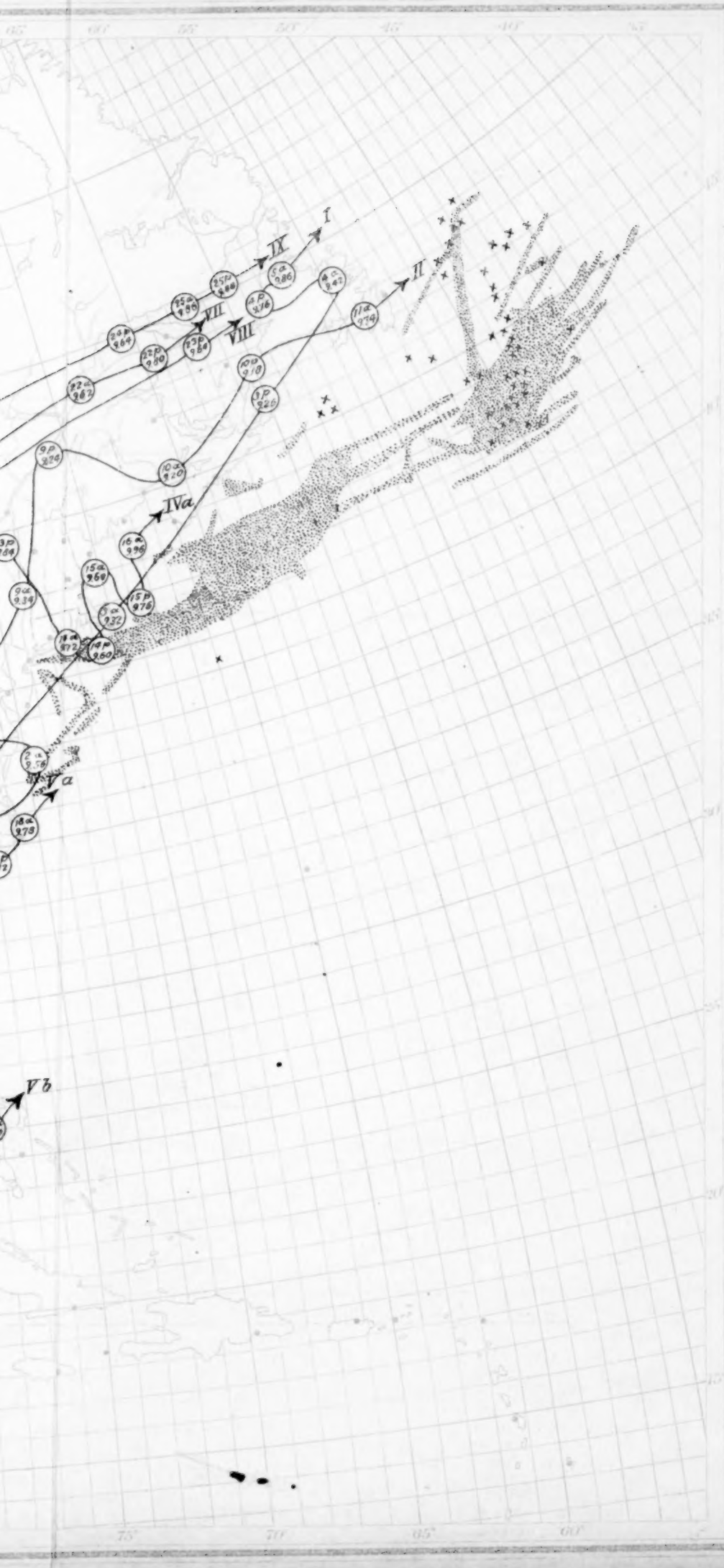
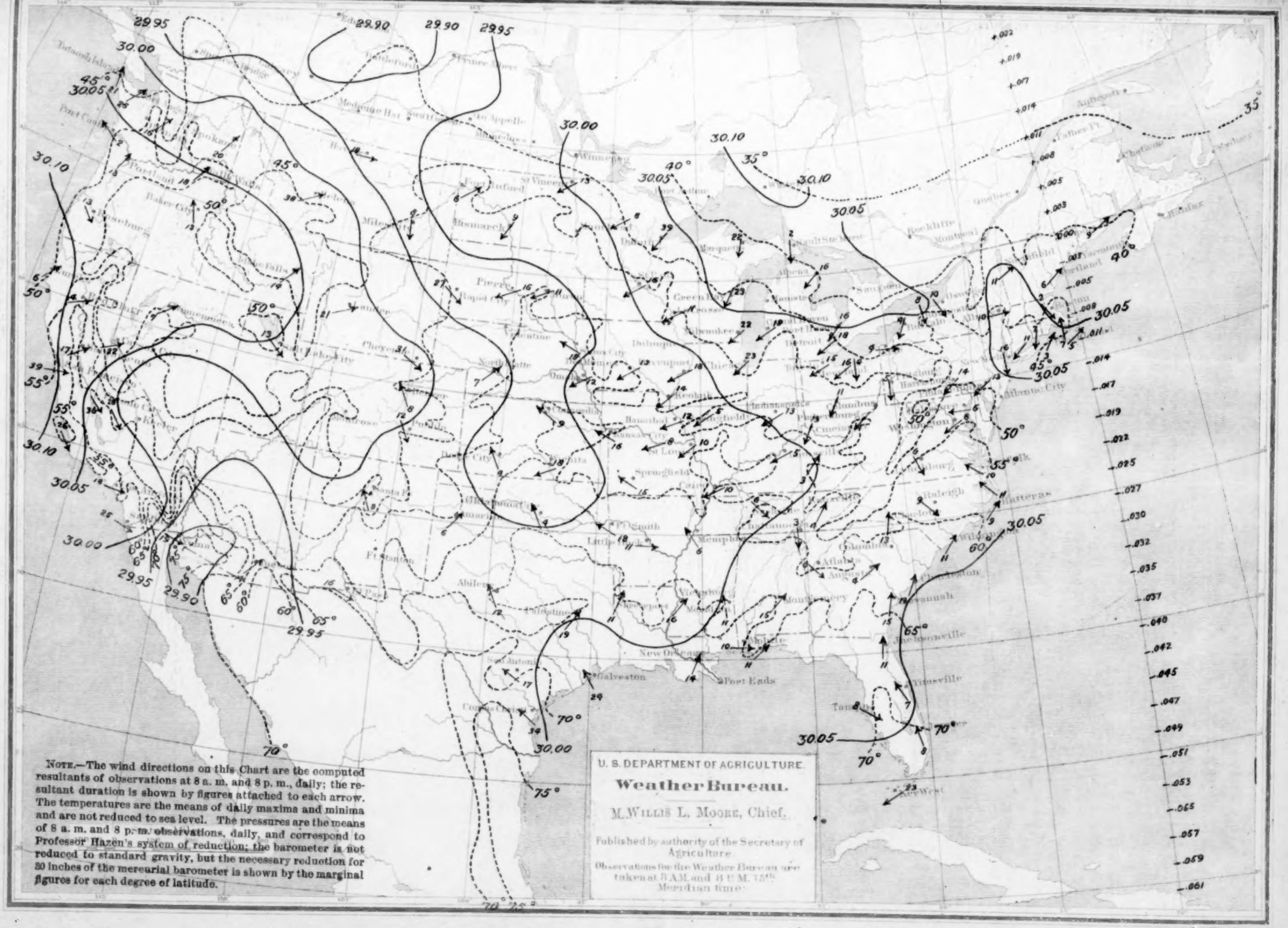

I
II
IVa
Va
Vb
VII
VIII
IX
11a 974
4a 941
5a 986
25a 996
20p 964
22p 960
23p 980
22a 962
9p 976
10a 970
3p 976
10p 970
9p 976
10a 970
16a 996
15a 960
9a 934
15p 976
5a 972
14a 972
14p 960
2a 978
18a 978

Chart II. Isobars, Isotherms, and Resultant Winds. April, 1905.

Chart II. Isobars, Isotherms, and Resultant Winds. April, 1895.



Note.—The wind directions on this Chart are the computed resultants of observations at 8 a. m. and 8 p. m., daily; the resultant duration is shown by figures attached to each arrow. The temperatures are the means of daily maxima and minima and are not reduced to sea level. The pressures are the means of 8 a. m. and 8 p. m. observations, daily, and correspond to Professor Hazen's system of reduction; the barometer is not reduced to standard gravity, but the necessary reduction for 30 inches of the mercurial barometer is shown by the marginal figures for each degree of latitude.

U. S. DEPARTMENT OF AGRICULTURE.

Weather Bureau.

M. Willis L. Moore, Chief.

Published by authority of the Secretary of Agriculture.

Observations for the Weather Bureau are taken at 8 A.M. and 8 P.M. 75th Meridian time.

Chart III. Total Precipitation. April, 1895.

Chart III. Total Precipitation. April, 1895.

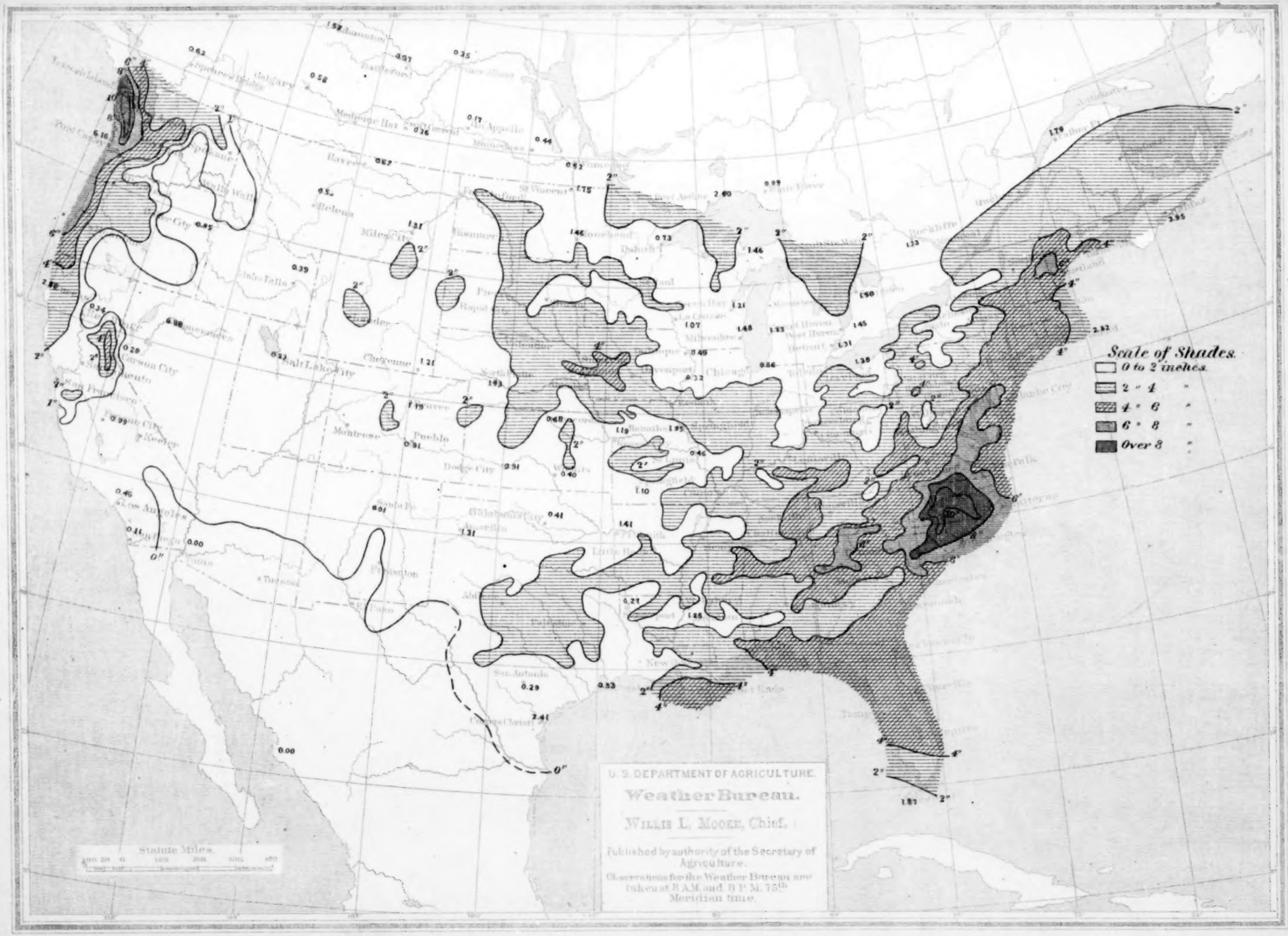

Scale of Shades.
0 to 2 inches.
2 " 4 "
4 " 6 "
6 " 8 "
Over 8 "
Statute Miles.
U. S. DEPARTMENT OF AGRICULTURE.
Weather Bureau.
Willis L. Moore, Chief.
Published by authority of the Secretary of Agriculture.
Observations for the Weather Bureau are taken at 8 A.M. and 8 P.M. 75th Meridian time.

Chart IV. Tracks of Centers of High Areas, April, 1895.

Chart IV. Tracks of Centers of High Areas. April, 1895

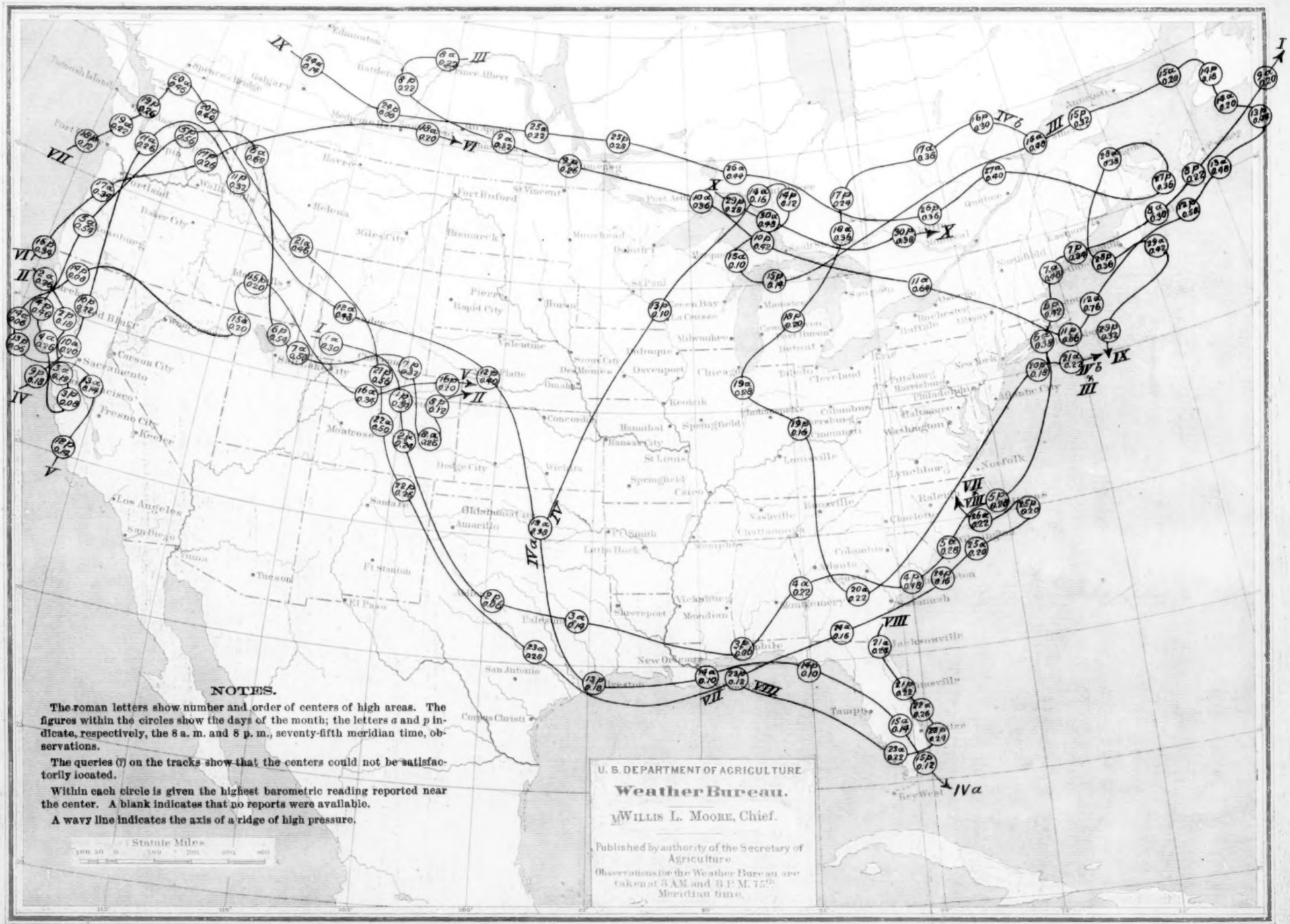
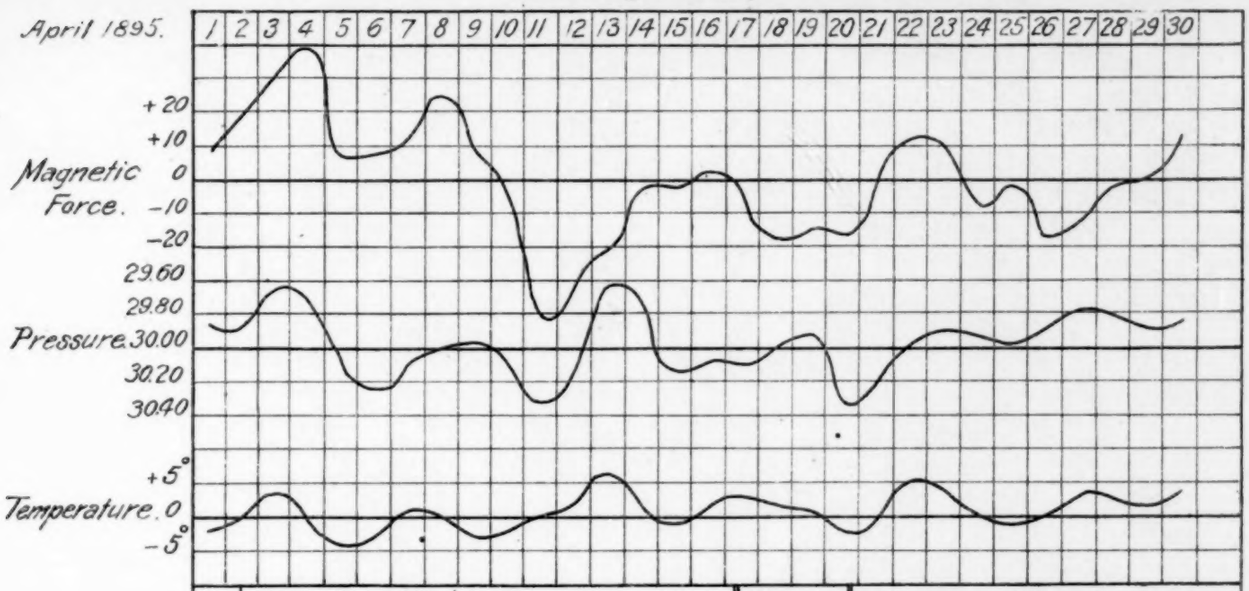

NOTES.
The roman letters show number and order of centers of high areas. The figures within the circles show the days of the month; the letters a and p indicate, respectively, the 8 a. m. and 8 p. m., seventy-fifth meridian time, observations.
The queries (?) on the tracks show that the centers could not be satisfactorily located.
Within each circle is given the highest barometric reading reported near the center. A blank indicates that no reports were available.
A wavy line indicates the axis of a ridge of high pressure.
Statute Miles
U. S. DEPARTMENT OF AGRICULTURE
Weather Bureau.
Willis L. Moore, Chief.
Published by authority of the Secretary of Agriculture
Observations for the Weather Bureau are taken at 8 A.M. and 8 P.M. 75th Meridian time.

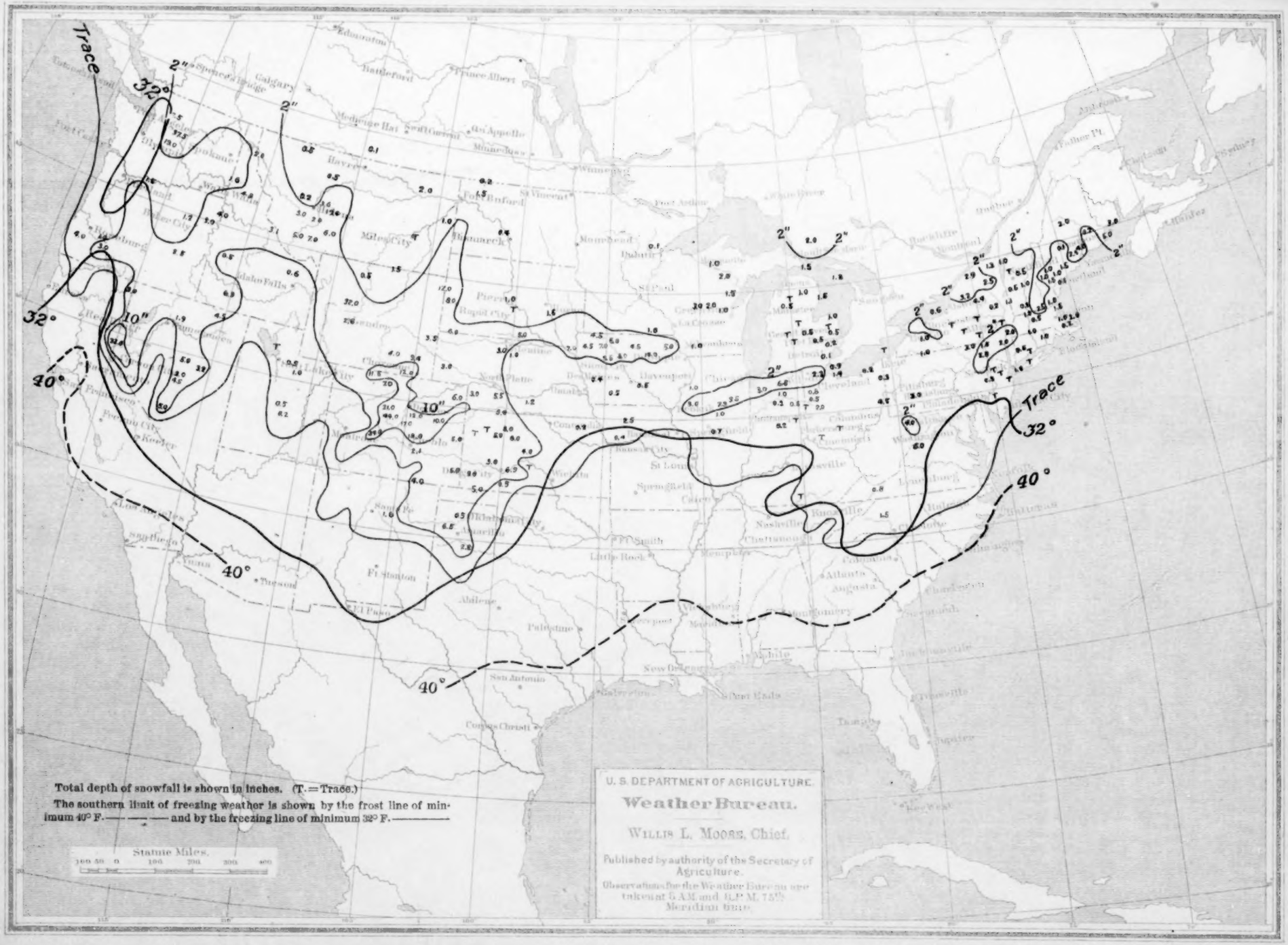
Chart V. Relative Variations of the Horizontal Magnetic Force and the Northwest Pressures and Temperatures.



April 1895.	North-West Temperatures.							Pressure.	Horizontal Magnetic Force.				
	Calgary.	Salt Lake City.	Williston.	Variations. Calgary.	S.L.City.	Williston.	Means - 5.	10 North West Stations	Toronto.	Washington	Variations. Toronto.	Washington.	Means +19.
1	40	41	40	+3	+3	+2	-2	29.89	435.1	55.0	-19	0	+9
2	41	43	45	+4	+5	+6	0	.88	436.9	55.2	-2	+1	+19
3	42	46	53	+5	+8	+13	+4	.65	437.7	56.7	+5	+15	+29
4	40	42	43	+3	+4	+2	-2	.69	438.9	58.1	+16	+28	+41
5	41	33	45	+4	-5	+3	-4	30.09	435.4	54.8	-20	-6	+6
6	41	38	46	+4	0	+3	-3	.24	436.0	55.1	-15	-4	+9
7	45	45	48	+8	+7	+4	+1	.10	437.0	54.7	-6	-9	+11
8	41	50	44	+4	+12	-1	0	.02	437.9	56.7	+2	+10	+25
9	34	49	45	-3	+11	-1	-3	29.99	436.4	54.9	-14	-9	+7
10	35	48	49	-2	+10	+2	-2	30.03	435.9	53.8	-20	-21	-2
11	41	48	49	+4	+10	+1	0	.34	433.7	47.9	-43	-81	-43
12	45	50	50	+8	+12	+1	+2	.14	433.8	51.1	-43	-50	-28
13	48	56	58	+11	+18	+8	+7	29.61	434.8	51.7	-34	-45	-21
14	47	46	49	+10	+8	-2	0	.89	436.2	53.9	-21	-24	-4
15	45	46	49	+8	+8	-3	-1	30.16	435.8	54.5	-26	-19	-4
16	49	48	53	+12	+10	0	+2	.07	437.4	54.2	-11	-23	+2
17	46	51	55	+9	+13	+1	+3	.10	435.8	54.4	-28	-22	-6
18	43	50	58	+6	+12	+3	+2	29.99	435.7	52.2	-30	-45	-19
19	46	54	49	+9	+16	-7	+1	.94	436.0	53.0	-28	-38	-14
20	43	46	48	+6	+8	-9	-3	30.36	435.6	53.0	-33	-39	-17
21	41	47	56	+4	+9	-2	-1	.15	437.2	55.7	-18	-13	+3
22	50	55	60	+13	+17	+1	+5	29.98	438.4	56.5	-7	-6	+12
23	49	60	54	+12	+22	-6	+4	.91	438.8	55.6	-4	-16	+9
24	40	56	52	+3	+18	-9	-1	.95	436.4	54.5	-29	-28	-9
25	39	55	55	+2	+17	-7	-1	30.00	437.2	55.4	-22	-20	-2
26	41	55	58	+4	+17	-5	0	29.91	435.5	53.8	-40	-37	-19
27	47	55	60	+10	+17	-4	+3	.79	437.0	53.9	-26	-37	-12
28	52	52	57	+15	+14	-8	+2	.82	438.2	55.0	-15	-27	-2
29	51	52	58	+14	+14	-8	+2	.90	437.9	55.7	-19	-21	-1
30	52	53	60	+15	+15	-7	+3	.88	438.9	57.7	-10	-2	+13

Chart VI. Depth of Snowfall and Limits of Freezing Weather, April 1905.

Chart VI. Depth of Snowfall and Limits of Freezing Weather. April, 1895.


Trace
2"
32°
10"
40°
Total depth of snowfall is shown in inches. (T. = Trace.)
The southern limit of freezing weather is shown by the frost line of minimum 40° F. — — — and by the freezing line of minimum 32° F. ———
Statute Miles.
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